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ABSTRACT

A second year evaluation of the educational television series "Sesame Street" was carried out. One aspect of the study was a replication of the first year study and an exploration of the impact of the second year's extended and new goal areas. The second aspect was a followup of at-home disadvantaged children who were subjects in the first year evaluation. New data were gathered from disadvantaged children in Winston-Salem, North Carolina, and Los Angeles, California. Children in these cities were divided into an "encouraged" group--(their television sets were modified to receive the Sesame Street program by a cable hook-up or UHF adaptor), and a "not-encouraged" group, which served as a control. It was found that encouraged students viewed more than not-encouraged students and that those who viewed more learned more of the readiness skills taught by the program. A followup study, conducted in Boston, Durham, and Phoenix, showed that students who viewed Sesame Street a second year improved still more in learning complex skills. Those who viewed the program for one year and then entered school were found to be more positive in their attitudes toward school and toward other races. Appendixes contain questionnaires, tests samples, survey forms, and other substantiating data. (JY)

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THE SECOND YEAR OF SESAME STREET: A CONTINUING EVALUATION

Volume 1

by: Gerry Ann Bogatz

Samuel Ball

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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A report to the Children's Television Workshop

IR003418

Educational Testing Service
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Acknowledgements

We who have worked on this evaluation are pleased to announce our second annual award dinner for those who have helped us. We are not sure of all the details of the dinner--there was some debate until quite recently over whether we should even present our awards at a dinner or, in keeping with out Sesame Street heritage, whether it should be done at a morning or afternoon T. But those in favor of a dinner followed by the awarding ceremony "1" out, in a manner of speaking. Of course, the dinner will not be elaborate. It will begin with alphabet soup; then there will be a roast duck which, as with all official dinners, will be rubbery; vegetables will certainly include P's; and after dessert, there will be lots of cookies. It will be, as you can tell, a monster occasion.

As is traditional now since the time of our first annual awards, the dinner will be followed by the presentation of Earnies (Oscars being much too grouchy). But if all the details of the dinner are still half-baked, there is no doubt about who will be nominated for awards from the Evaluation Academy.

First, for the year's best director on location, we have five nominees (all of whom happen to be our site coordinators). The first three nominees received Earnies in the first year's presentations. These three re-nominees are:

Ms. Mary Adams for her sterling performance directing the follow-up documentary, Son of the Boston TV Party.

Ms. Anne Borders-Patterson for her talented direction of the epic, Durham Revisited.

Reverend G. Benjamin Brooks who provided masterly direction (with the assistance of Mrs. Donna Johnson) of the continuing series, Phoenix Arises and Arises and Arises. . . .

The other two nominees for the year's best directors on location are:

Ms. Valerie Puryear for her direction of the mystery set in North Carolina, Nine Months in W******-S****. (Unfortunately, the new anti-cigarette advertising regulations of the FCC prevent our mentioning on our televised award ceremony the name of the city where the direction took place).

Mr. Henry Anderson for his direction of the extravaganza, I Left my Heart in Los Angeles.
We cannot disclose the winner yet, but it would not be surprising if all five nominees were tied for first place.

The nominee for best performance in a supporting role is an area where a clear-cut decision is possible. Ms. Adele Lechowicz performed splendidly. You might say she was cast to type, and she is very likely to obtain an Earnie if she will just keep on typing.

Our great admiration for the best behind-the-scenes technical work goes to Mr. John Ferris, Ms. Alice Gerb, and Mr. Robert Patrick. They worked consistently (from data day) in the editing and programming and analysis departments, and the final results are clearly due to their devotion to detail. All can expect Earnies wrapped in special IBM tape.

We expect that Mr. Albert Beaton and Mr. Ernest Anastasio, Director and Assistant Director of the ETS Office of Data Analysis, will get special awards. In the area of statistical analysis, it is pleasing to note that ETS has its very own Bert and Ernie, and they helped us almost as instructively and entertainingly as the other Bert and Ernie helped the Sesame Street kids.

We will be presenting a very special Earnie to Ms. Sandi Landes whose art work meant so much to the attractiveness of the tests. Her skill in research, her understanding of this project, and her graphic talent proved an ideal combination.

We intend, this year, to ensure that the person who lets the interpretive errors and illogical sequences go undetected will himself not be undetected. Mr. Thomas Barrows is responsible, so an eagle-eyed Earnie to Tom.

Of course, there are the hundreds of workers out there who made all of this possible-- the extras on location but for whom we would never have been able to have our Second Annual Evaluation Dinner and Earnie presentation. If it were possible to thank them all personally and individually, we would. However, no dinner would be complete without a toast to Ms. Frieda Hardy, Ms. Gita Wilder, Ms. Tomi Lubrano, Ms. Lola Appel, and Ms. Patricia Clyde for their special contributions.

But now, before the big dinner, we want to present in detail the year's work. When that is done, we can all, hopefully, relax with our Earnies or whomever. And next, the report.

Gerry Ann Bogatz, Associate Project Director
Samuel Ball, Project Director
ETS, Princeton

NOTES

All tables and figures referred to in this report are bound in a separate volume. Abstracts of tables are presented within the text of the report for ease in reading, but readers should consult Volume 2 for the complete data presentations. The tables and figures were placed in a separate volume so that the flow of the discussion would not be interrupted and so that the readers could have the relevant table in front of them as they read the text.

The first chapter of this report focuses on the first year of Sesame Street. A summary of our first year evaluation report is presented along with a discussion of some of the questions it raised. Questions concerning the show itself are also presented. It is noted that the ETS evaluation helps to throw light on some but not all of these questions. Chapter I is intended as a prelude to the second major emphasis -- the evaluation of the second year of Sesame Street. However if the reader wishes to concentrate directly on the second year evaluation, she or he should feel free to begin at Chapter II.

CHAPTER I. INTRODUCTION

A. The First Year Evaluation: A Summary

Children's Television Workshop (CTW) began work in the summer of 1968. Its major initial goal was to produce a television show for preschool-aged children -- a show that would be both entertaining and educational. The product, Sesame Street, was telecast beginning November, 1969 by more than 200 educational television stations in the United States, and subsequently, in more than 50 nations. Its audience has included tens of millions of children.

The summative evaluation of the first year of Sesame Street was carried out by Educational Testing Service (ETS). The involvement of ETS began soon after CTW was established. Given the behaviorally stated goals that CTW developed during the summer of 1968, ETS, in the next year, developed a battery of tests to assess the status of 3- through 5-year-old children in those goal areas.

With the battery of tests developed and pilot tested, ETS personnel went into the field and sampled over a thousand preschool-aged children in five geographic areas -- Boston, suburban Philadelphia, Durham, Phoenix, and northeastern rural California. We worked through community agencies and community leaders in each of these areas, and our coordinators and testers were all indigenous to the areas in which we worked. We pretested over 1200 children and, after normal attrition, a final group of 943 children were both pretested and posttested.

As well as obtaining these data on the children, we administered pretest and posttest parent questionnaires which provided information on the children's home backgrounds -- for example, the socioeconomic status of the home, the intellectual and educational climate of the home, the mother's level of aspiration for her child, and the child's television viewing habits. ETS also observed children viewing the show, obtained estimates of how much the children viewed the show, and found out what teachers thought of the show. All these data were obtained from our five sites. Meanwhile, back in the central office at Princeton, N.J. we developed a content analysis of Sesame Street in order to be able to indicate the percentage of time spent on each goal and the percentage of time particular television techniques were used to teach each goal.

Behind these activities were three major evaluational principles. First, we were concerned not only that the intended outcomes of the show be assessed, but, as well, we consciously attempted to assess at least some unintended outcomes. Much of the information on the parent questionnaires was useful in this respect. For example, it was possible to tell whether Sesame Street affected a mother's aspirations for her child's education or whether the frequent viewers of Sesame Street had different television viewing habits than the non-viewers.

A second principle that was followed in the evaluation was that interactions were at least as important as main effects. That is, we were not simply concerned with the question of whether, in general, children who viewed more learned more, but with the question of which children learned more. Therefore, we sampled middle class and lower class children, children at home and at school, black children and white children, children from several geographic areas, children aged 3, 4, and 5, children with Spanish language backgrounds and English language backgrounds, and urban, suburban, and rural children.

A third principle that we viewed as important was that there should be longitudinal evidence on our sample rather than cross-sectional. Thus, we felt it important that children in our sample be followed through, at least for a second year. (In fact, this is one of the elements of the second year evaluation to be presented later in this report.)

With the major principles of the evaluation established, the measures developed, and the field sites established, the data for the evaluation were collected, edited, and then analyzed. The first set of analyses carred out were descriptive, enabling us to indicate in considerable detail the status of the children at pretest and at posttest. Since the children had been divided into quartiles on the basis of amount of viewing, it was possible to look at gain scores from pretest to posttest in terms of how much they had viewed. A second set of analyses involved inferential statistics using a multivariate analysis of variance (MANOVA) technique. A third set of analyses termed "probing" explored the data using several logical manipulations to uncover relationships. The amount of data and the number of analyses were extensive, and the first year's report reflects this.[1] A brief summary of the conclusions of the first year's study is provided in Appendix A.

There were, as one might expect, many well-qualified people who assumed the role of critics of Sesame Street. The criticisms fell into three major categories: those that dealt with educational issues related to the show itself, those that saw technical deficiencies in the ETS report, and those that claimed to have evidence that contradicted the evidence in the ETS report. It would be presumptuous to suggest that we can deal completely with each of these three categories of criticism. However it would be derelict of us to ignore these criticisms because at least some of the evaluative research can be used in a discussion of them.

---

[1] See Ball, Samuel and Bogatz, Gerry Ann, The First Year of Sesame Street: An Evaluation. ETS, 1970. This report is available from Teachers College Press, 525 W. 120th Street, New York, N.Y. 10027.

B. Outcomes of the First Year's Evaluation

1. Educational Issues. A wide range of educational issues has been noted in our admittedly incomplete survey of the press and of educational journals. Discussed below are some of the critical themes that seem to be represented:

   a. Many of the criticisms of Sesame Street centered on the goals and the resulting curriculum of the show. For example, Dr. Kenneth Smith of the University of Arizona argued that even if the goals in the pre-reading area were achieved it would be poor preparation for learning to read. (The Arizona Republic, Phoenix, Arizona, May 4, 1971)

   Some Spanish-speaking critics claimed that Sesame Street was not geared to their children. (Daily News, April 29, 1971, New York, N.Y.)

   James Cass, while judging the show to be worthwhile, argued that the goals were too narrow (Saturday Review, December 19, 1970.) One might infer from this that Mr. Cass and probably other serious students of Sesame Street perhaps would have preferred a greater emphasis on non-cognitive goals (social, affective, and attitudinal.)

   With respect to these kinds of criticisms of the show, the first year's evaluation and this current report can take no stand. It is a matter of public record that the goals of Sesame Street were expanded from the first to the second year, indicating a desire by those responsible for it to adapt the goals and curriculum as experience was gained. One could argue on the merits of each of the criticisms whether changes in the second year ought to have been made and whether the new goals were improvements. While it is known that experts in a number of preschool-related areas developed the goals while bearing in mind the limitations of television, it was also clear that there would be no unanimity as to what the goals should have been. Goals belong in the realm of value judgments. We, as evaluators, could have obtained the ratings of preschool experts and of representatives of special interest groups to find out the extent to which the goals were approved. However, that was not our charge. The ETS reports on Sesame Street are basically evaluations of how successful the show was in achieving what it set itself to achieve.

b. Closely related to the criticism of the show's goals were the criticisms of the show's curriculum. Perhaps the best reasoned set of these criticisms was written by John Holt (Big Bird, Meet Dick and Jane. Atlantic, April 1971). Some of the constructive criticisms made by Holt were shown to be unnecessary because his ideas were already in use on the show (see, Holt on Sesame Street, in the correspondence column of Atlantic in subsequent issues). However, there was no doubt that CTW found his article useful. A letter to the editor written by Joan Ganz Cooney, President of CTW, stated: "We find ourselves in agreement with many of his suggestions. . . ."

In developing the evaluations of Sesame Street, ETS did not attempt to study the curriculum, per se, in detail. Of course, one of our roles was to describe the curriculum as the major input variable because our summative evaluation was seeking to assess the impact of this input; but CTW had its own in-house research group, one of whose purposes was to aid in curriculum development through empirical research and the judicious use of expert consultants. Thus, the ETS evaluations do not present direct evidence as to the worthwhileness of the actual curriculum vis a vis other possible alternative curricula. Rather, the studies indicate some of the effects of the curriculum as presented on the show.

c. Another group of criticisms seemed to center not so much on the goals or on the curriculum but on the style of the show and, at times, on the very use of television as a teaching medium. For example, Flora Boylan, President of the New Jersey Association of Elementary, Kindergarten, and Nursery Educators, argued that hours spent sitting watching television would never replace "the actual learning that comes from personal invlovement." (Todays Education, Washington, D.C. April, 1971). Frank Garfunkel argued that Sesame Street was an absurd enterprise in which children learn by rote memory "a disjointed collection of tidbits." (Bostonia, March, 1970). Helen L. Beck, at a meeting of the American Orthopsychiatric Association, is quoted as saying that Sesame Street prevented the development of children's attention spans because of its fragmented presentation of material (The Arizona Republic, May 4, 1971).

Perhaps the most publicized criticism of the show's style was made by Monica Sims of the British Broadcasting Corporation. In justifying BBC's decision not to show Sesame Street, but to show Huckleberry Hound and Yogi Bear, she argued that Sesame Street had "authoritarian aims," evidenced in its intent to change children's behavior. (Apparently Yogi Bear is more democratic since it does not attempt to teach.) As well she argued that Sesame Street used techniques normally used in television commercials. (See Fred M. Hechinger, The New York Times, September 12, 1971.)

The major assumptions that seem to underlie these criticisms are that rote learning is bad, that most if not all the learning children experience from watching Sesame Street is rote learning, and that children viewing Sesame Street are passive recipients of knowledge. As psychologists, we might take issue with the first assumption that rote learning of basic knowledge and skills through principles of association is inherently bad. It seems clear that this kind of learning is natural, economical, and efficient when applied to the learning of simple skills and areas of basic knowledge.[1. 2.] This is not to say that rote learning is the only worthwhile means of learning or that it should be over-emphasized as a vehicle of learning.

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[1] Gagne, R. M. Conditions of Learning. New York: Holt Rinehart Winston, 1965.

[2] Ball, S. Learning and Teaching. Chapter 1 in Davitz, J. R. and Ball, S. (Eds) Psychology of the Educational Process. New York: McGraw-Hill, 1970.

However, it would be unwise here to become involved in a theoretical argument. What matters is empirical evidence that in viewing Sesame Street, children were not passive and their learning included more than the accumulation of important basic skills through simple continuous associations (rote learning). On the question of passivity it would be worthwhile examining the observational data from the first year report on the visual, vocal, and motor activities of the children. On the question of what was learned it is even more instructive to examine the areas where frequent viewers made substantial gains. These included classification and sorting skills that involved complex judgmental and evaluative cognitive processes.

In the controversy about the style of the show, and to an extent in criticisms relating to the goals and curriculum of the show, one element must be considered. Sesame Street was not developed as a substitute for an educationally excellent nursery school. It was not even primarily intended as an addition to the general curriculum of a nursery school. Rather it was meant as an ingredient for the educational diet of the millions of 3- through 5-year-old children who do not have the opportunity of going to preschool. Some work has been done to compare the progress of in-school viewers with in-school non-viewers in order to assess the show's value as a part of the school curriculum. We have not designed our research to allow a systematic comparison of the progress of non-school Sesame Street viewers with the progress of children who are in school. Such a comparison would miss the point both of Sesame Street and of a good preschool program.

Allied to this is the more general consideration that there is little objective evidence of the effects of television on the social and affective growth of children. CTW, therefore, deliberately focussed on cognitive goals in the first year of Sesame Street, believing these to be both important and achievable using the television medium. The evaluation necessarily indicated this cognitive emphasis. In the second year's evaluation we added two different measures of attitudes (see Chapter II, C2 and C6.) These additions were made because of our conviction of the need to expand into the attitude area as a preliminary study of possible side-effects of Sesame Street. The additions were made over the protests of some of CTW's consultants who pointed out, correctly, that the assessment of attitudes in 3- through 5-year-old children is a hazardous enterprise and that attitude change is not the major focus of the show.

In general, the ETS evaluations have attempted to see whether Sesame Street has achieved the goals it set itself. The evaluations have also tried to find both positive and negative side effects, interactions among various groups of children, and long-term effects.

2. Technical Issues Concerning the First Year's Evaluation. After the publication of the ETS evaluation report on the first year of Sesame Street, readers brought to our attention a number of questions concerning the results and the methodology of the research.[1]

In the following pages some of the major questions raised by readers will be presented and discussed. When appropriate, we performed further analyses of the first year data and these will be presented too.

a. Did black disadvantaged children perform as well as white disadvantaged children?

The sampling procedures in our evaluations were not developed in order to answer this question, so no definitive response can be made. One might even argue that an appropriate sampling procedure could not have been developed even if it had been desired because there is no satisfactory way of equating the degree of "disadvantageness" of a group of black children with that of white children. One might attempt to assess for each child such factors as the degree of poverty, the intellectual and emotional climate of the home, the influences of the neighborhood, and the number of extra familial educational experiences. But even if matching on these variables were possible, it would be impossible to ensure the comparability of growing up black and growing up white.

---

[1] An unusual additional element in this process was furnished through a grant made by the Russell Sage Foundation to Dr. Thomas Cook, a member of the faculty of Northwestern University. The purpose of the grant was to allow Dr. Cook to carry out an intensive case study of both the first and second year evaluations of Sesame Street. We have profited greatly from the questions that Dr. Cook has raised.

Nonetheless, even if the assumption of comparability of our black and our white disadvantaged children cannot be made, an intriguing question remains. Do the black disadvantaged children and the white disadvantaged children in the study benefit from Sesame Street to a similar degree even though the two groups are not strictly comparable?

In order to answer this question we referred to the first year data. In Boston and in Phoenix there were in the sample both black disadvantaged children and white disadvantaged children in substantial numbers. In Durham almost all the sampled children were black. To prevent site differences from contaminating the results, Durham was excluded from consideration. Also excluded from consideration were the Spanish-background children from Phoenix.

Table 1 presents data based upon Boston and Phoenix disadvantaged children subdivided into quartiles by amount of viewing and indicating their pretest and gain scores, their Peabody IQ's, and a socioeconomic index. It can be seen from Table 1 that both black and white children in our sample viewed Sesame Street about the same amount. Note that 46 percent of both groups fell into the heavier viewing half as determined from the total sample of children in the first year study

(Q3 and Q4).[1] As well, the SES index suggests that the groups had at least some elements in common apart from living in the poorer sections of the same cities. At pretest the black children's scores were quite similar to those of the white children (except in Q4 where the black children started somewhat higher). The gains of the two groups were very similar. A multivariate analysis of variance (MANOVA) performed on these data indicated that there was no statistically significant difference between the total gain scores of the two groups.

It is noteworthy in passing that the Peabody Picture Vocabulary Test (PPVT) scores are significantly different by an average of about 10 points despite the other similarities of the two groups.[2]

In summary, there is no single proper way to compare the performance of the black disadvantaged and the white disadvantaged in the context of this evaluation of Sesame Street. If one does compare their scores at pretest and their gains to posttest, no significant differences can be seen.

b. Can the positive effects of the show noted in the first year report be accounted for by the confounding of amount of viewing with status at pretest?

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[1] See Appendix A for a full description of Year I quartiles. Note that the N's in each quartile are unequal because the quartiles were established using data on all children in the study. The children described above are a subsample of the total described in the Appendix.

[2] The PPVT measures a child's achievement in the area of oral receptive vocabulary and seems to be oriented toward white children. For example, of the pictures in the test, only two portray blacks — one is a porter and the other is a spear carrier. However, it has a rich history of use in research studies, and its dubious value in black-white comparisons does not necessarily deny its usefulness as a means of relating this research to other studies.

In the research design for the evaluation of the first year of Sesame Street, children were randomly allocated into two major groups. One was an encouraged group whose mothers or teachers were given persuasive arguments to get them to have their children view the show. The other group was not so encouraged. Before Sesame Street began telecasting, some senior consultants to the study suggested that the encouragement condition would be too weak, and the idea was put forward that we should much more actively encourage experimental children to view. In fact, the problem was not one of too little viewing. Most of the sampled children viewed the show at least some of the time -- even those in the not-encouraged control group. It seemed, therefore, to be futile to compare the gains of experimental children with those of control children because both groups had large numbers of viewing children.

In an attempt to overcome this problem, all children in the study were subsequently divided into four groups (Q1-Q4) according to their amount of viewing. Unfortunately, amount of viewing was found to be positively related to pretest scores, and while the groups which viewed more gained more, there was a need to show that this was not attributable to their higher status at pretest. In the first year report, covariance techniques and the "age cohorts study" (see Appendix A) were used to meet this need.

After the publication of the first year report, there was time for a further and more leisurely look at the data. Two of the comparisons that were then made are of interest in their own right, but they also further substantiate the conclusion that differences in gains among the viewing groups cannot reasonably be attributed to differences among them at pretest.

Consider the performance of the children divided by age into 3-, 4-, and 5-year-old groups and then further subdivided by amount of viewing. Scores at pretest and posttest are presented graphically in Figure 1. Before Sesame Street went on the air, older children almost invariably performed higher on the test than younger children. After Sesame Street, however, 3-year-olds who watched most (Q4) scored higher at posttest than three of the 4-year-old groups and two of the 5-year-old groups, although these 3-year-olds had a pretest score lower than all 5-year-olds and all but one of the 4-year-old groups.

In other words, the placement of the children along the scale measuring the goals of Sesame Street was very dependent on age at pretest, while at posttest it was much more related to amount of viewing. In passing, it should be noted that these data also suggest that 3- and 4-year-olds are capable of learning many of the skills traditionally reserved for the 5-year-old in school. And the data also support the general result of the evaluation: that children who watched the most (Q4 and Q3) learned the most.

A second comparison can be made between the middle-class 4-year-old children in the study and the 4-year-old disadvantaged children. Recent history of research has warned that such comparisons are often unwise primarily because so many things differentiate the two groups that a comparison is likely to be an invidious one, unfairly discriminating against the disadvantaged group. However, in this instance, the comparison allows us better to discover the differing impact of the show on different children. At least the show itself was identical no matter who tuned in the television set.

It was found that at pretest time every group of advantaged children scored higher than every group of disadvantaged children. However, at posttest, the gains of Q3 and Q4 disadvantaged children resulted in a realignment; no longer were scores directly related to social class, but rather social-class effects were clearly modified by amount of viewing. Disadvantaged children who often watched Sesame Street performed better on the measures of the show's goals than advantaged children who watched Sesame Street rarely or never.[1]

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[1] One critic of the ETS report (Sprigle, Young Children, March, 1971) argued that from his reading of the first year report, middle-class children on the average learn more than lower class children. However, he obtained this result by adding in the scores of all children who did not view the show. This, of course, depressed the average gain score of the lower class children since, as our data show, they do not develop as quickly in their economically poorer environments as middle class children do in their more advantaged environments. Lower class non-viewers gained less than middle class non-viewers, and it seems unreasonable to add their scores with those of the viewing children and then argue that the show has a poorer effect on disadvantaged children.

If the viewing of Sesame Street were not effective and the gains noted in the first year study among the four viewing groups were primarily a matter of differential growth rates noted at pretest, then the juxtapositions of age and the social class groupings at posttest would be difficult indeed to explain.

c. To what extent were the positive results noted in the first year report a function of the index used to assess the children's amount of viewing?[1]

In the first year of Sesame Street, the decision was made to use four different techniques to assess amount of viewing and then to combine them into a single index if statistical analyses indicated this to be reasonable. One technique was to include in the posttest parent questionnaire items concerning the child's viewing behavior from which a score was determined. A second technique (for encouraged children) was to have mothers fill in a daily viewing record. A third technique was to leave at the child's home the next day's complete TV program and ask the mother to indicate what the child watched that next day. (This technique was used for all at-home children.)

It will be noted that each of these first three techniques depended upon an adult for the data. A fourth technique used was the administration to the child of the

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[1] This question came independently from a number of sources including Professor Robert Thorndike of Teachers College, Columbia University, and Professors Donald Campbell and Thomas Cook of Northwestern University. We appreciate their constructive critiques.

Sesame Street Test -- a test with quite simple items which asked whether the child knew the characters on the show. The argument against the inclusion of this measure was that it not only differentiated viewers from non-viewers but that it also would tend to differentiate viewers with high learning ability from viewers who were slower learners. Thus a child with a high score on this test must have viewed Sesame Street, but a low score could indicate a non-viewer or a dull viewer.

Table 2 presents the intercorrelations of the four viewing scores and the correlations of the four viewing scores and the composite of all four scores with the pretest total score, posttest total score, and the gain score. Note that the Sesame Street Test score correlated more highly with the measures of child status and gain, but that all viewing measures showed significantly higher correlations with posttest than with pretest scores and that the correlations of the three non-test viewing measures with pretest status were negligible.

Without attempting to debate the issue as to whether the Sesame Street Test was a fair measure of amount of viewing, it can be seen from Table 3 that the results portrayed in the first year evaluation report (based on the composite measure) would have been repeated even if other measures or sets of measures of viewing had been used. In fact the percentage of gain over pretest remains remarkably stable with only a three percent range in Q1 (28 percent, 26 percent, or

25 percent depending on the viewing measure used); a three percent range in Q2, a six percent range in Q3, and a four percent range in Q4.

Multivariate analyses of variance were carried out and as one would have expected from studying Table 3, the statistical analyses show amount of viewing to be highly significant no matter which measure of viewing was used. Tables 4, 5, 6, and 7 provide the basic information from the MANOVA's and the subsequent univariate tests of the effects of amount of viewing.

In short, while it is proper to question the use of the Sesame Street Test as an element in the amount of viewing index used in the first year study, it is not reasonable to assume that the conclusions reached in the first year report were artifactually based on the use of this measure.

3. Other Research on Sesame Street. In this chapter on the backward look at the first year of Sesame Street, an attempt has been made to respond to critics of the show who stressed educational issues. Light was shed on some but not all of these criticisms by reviewing the first year evaluation. A second goal of this section has been to respond to specific questions raised with respect to the first year report, and it is hoped that the extra information provided will prove useful.

The third task is to respond to the only other piece of research currently published on the effects of Sesame Street. In March, 1971 an article by Herbert Sprigle appeared in Young Children. The major conclusions of the article were different from those reached in the ETS report. He argued that Sesame Street did not accomplish its goal in helping poverty children.

A number of reservations must be made with respect to the research on which these conclusions were based — indeed Sprigle shares some of these reservations. A listing of the major ones would include:

a. There are only 24 "matched" pairs in Sprigle's experiment. While, given certain matching criteria, this might represent a reasonable number for a pilot study, unfortunately no data on the pretest scores of these children are provided.[1] The children were "matched" at pretest on IQ as measured by the Stanford-Binet and at posttest a switch was made to the less reliable Goodenough Draw-a-Man Test. Posttest IQ scores are provided by Sprigle and indicate:

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[1] Requests for these data, or for summaries of them, have not been responded to.

	Male	Female
Sesame Street viewers	84	82
Sesame Street non-viewers	120	110

Thus, in a period of about six months, differences of an average of about 32 points in IQ appear. Could any educational television show that totals 130 hours over a six month period cause such a disastrous loss? Could any educational alternative to viewing the show cause such a startling improvement in IQ? Either way, or in combination, there is nothing in the theoretical or empirical literature to suggest the credibility of the result. The strong likelihood is that the initial matching was unsound. Note too that Sprigle states the pairs were "randomly matched." It is unclear what this means. Hopefully, the pairs were systematically matched, and then randomly one member was assigned to one group and the matchee to the other group. It does not seem as though this was done.

b. The children in Sprigle's study are 5- and 6-year-olds. However, Sesame Street was aimed at 4-year-old children. (The ETS first year report clearly indicates that Sesame Street worked best for 3- and 4-year-old children.

c. Sprigle's control group (non-viewers of Sesame Street) were put in groups of four children, each group with its own teacher. No one, surely, would argue for Sesame Street over such a potentially enriching educational experience. Sesame

Street was not intended as a substitute for Head Start, and it was certainly not intended as a substitute for an intensive (4:1 child-teacher ratio) small group experience. Its major mission was to help the large majority of 4-year-olds who do not have the advantage of any formal educational experience. Thus, Sprigle's comparison is specious.

For these reasons alone it would seem that there is a need to review Sprigle's data with the purpose perhaps of arriving at a different set of conclusions. His comparison group is not appropriate,[1] his sampled children are not in the main targeted range,[2] and initial matching (which is crucial in his design) may not have been successfully achieved.[3] One could reasonably conclude, if one had faith in the initial matching, that Sesame Street as a preschool TV show is not as educationally effective for 5- and 6-year-old children viewing in classroom groups as the alternative of an educational program presented by an experienced adult working with groups of four children. This certainly is a reasonable conclusion based not only on the Sprigle study but one that could be expected from accumulated educational theory and practice. Such a conclusion certainly would not contradict the conclusions reached in the ETS first year report.

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[1] The show was meant primarily for at-home preschoolers. Comparing viewers with in school children having a probably excellent educational experience during the viewing period does not seem to be the appropriate comparison to make.

[2] Sesame Street was meant for 3- through 5- year-olds, Sprigle's group included many 6-year-olds.

[3] Data on matching were not reported, but posttest scores of IQ, stable and reliable for groups in the short-run, indicate initial matching may have failed.

In the next few years it is to be hoped that a great deal more research becomes available on the effects of Sesame Street, as well as for other educational shows. Our knowledge of the effects of television is, generally speaking, meager; and the problem that it is difficult to conduct research in this area is not a sufficient excuse. Fortunately, a number of researchers in different countries have contacted us at ETS for information about the Sesame Street work. The prospect of reading the results of their work is a welcome one.

C. Considerations for the Second Year Evaluation

There are many reasons why it was appropriate to carry out a second large scale evaluation. First, although the results of the first year study were generally positive, there was real need to replicate the study. Too rarely in the social sciences are replications attempted. It is as if positive results were a rare and precious work of art which, it is feared, could not be reproduced.

The kind of replication carried out in this second year study was influenced by two important considerations — lessons had been learned from experiences in the first year evaluation so that, for example, the criteria for the choice of sites were changed somewhat to ensure a better research design. This, and other improvements, will be detailed in Chapter II. In addition, the goals and curriculum of the second year of Sesame Street were modified by the CTW staff in response to ideas generated by criticisms and research from the first year. Thus, at least, the measures used in the second year evaluation also had to be modified to enable them to be sensitive to the repaved Sesame Street.

A further rationale for the second year study, over and above the need for replication, rests on the foundation that no educational impact can be properly evaluated merely in terms of its immediate consequences. The first year study had indicated a number of positive results (and some failures to obtain them), but all of these were in terms of relatively short run effects. The logistical and cost problems of longitudinal studies are great, but the need for the knowledge that can be gained makes the effort worthwhile. Therefore, in the second year evaluation a follow-up study was conducted in order to begin to ascertain the long term effects of the show.

The specific questions to be answered in the second year evaluation are presented in Chapter II.

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This first chapter has attempted to provide a background to the second year study. In the following chapters the focus of the report will be on describing comprehensively the second year evaluation, its results, and the conclusions we draw from those results.

CHAPTER II. PREPARING FOR THE SECOND YEAR EVALUATION

A. Design and Sampling Procedures

An important characteristic of Sesame Street is that it is an evolving show for preschool children. Changes occurred during the first year of the show as its writers and producers responded both to formative research from within the Workshop and to constructive suggestions from without. Additional changes occurred when CTW revised its goal statement (see Appendix B) and altered some of the emphases for the second season.

The ETS evaluation of the second year of Sesame Street had, as a major focus, the investigation of the effects of the second year of the show, partly as a replication of the first year study and partly to study the effects of the revised curriculum (The New Study).

A second purpose of the evaluation was to carry out a longitudinal study of children from the first year sample to determine whether effects noted in the first year proved cumulative in the second and whether they affected children in their first year of school (The Follow-up Study).

While these studies shared certain elements, an attempt will be made to keep the studies separate in this report.

1. The New Study. The major goal of the New Study was to assess the effects of the second year of the show on 3- through 5-year-old, at-home, disadvantaged children. The sampling procedures adopted were dependent upon the populations to which we wished to generalize.

   In the first year evaluation, target populations included urban, rural, and Spanish-background disadvantaged and suburban advantaged children. In general, positive results were obtained with each of these populations. Cost considerations precluded as wide-ranging a study in the second year, and first year results meant that the need to study a variety of populations was less urgent. From its cobblestone days, Sesame Street has been posited on helping disadvantaged preschool-aged children -- primarily those who do not have the advantage of formal educational opportunities. If there is one major raison d'etre for Sesame Street it is this. Therefore, in the second year evaluation, primary concern was placed upon at-home urban disadvantaged children.

In the first year report, attention was directed toward some unexpectedly large gains obtained by Spanish-background children who viewed Sesame Street. The view was expressed then that, in light of the educational problems being experienced by this large minority segment of the American population, it would be worthwhile to attempt to replicate the study.

The other major general consideration in setting up the sampling plan stemmed from a disappointing development in the first year study. It had been assumed that the majority of the sampled children would not view the show unless they were strongly encouraged to do so (the experimental group). It had also been assumed that the not-encouraged (control) children would not watch the show. The wisdom of hindsight tells us that this guess was in error. Most of the control children viewed the show. Thus the fact that children in the first year study had been randomly allocated to experimental or control conditions was no great help in the eventual interpretation of the data. Clearly, changes had to be made in the formulation of the research design to prevent this from happening in the New Study.

In short, the New Study sampled disadvantaged, at-home preschool children, and procedures were established so that sampled children allocated into experimental (viewing) and control (non-viewing) conditions would remain in those groups.

Thus, the first consideration in the selection of sites for the New Study was that experimental-control conditions could be established that would not be likely to break down when the second year of the show began telecasting. The availability of substantial numbers of disadvantaged children who had not viewed the show during its first year was also an important consideration. This precluded probability sampling from among the major urban areas since in most of them children viewed heavily in the first year.

Two sites met these criteria. The first was Winston-Salem, North Carolina. In its first year, Sesame Street was not available in Winston-Salem and became available during the second year only by virtue of the introduction of cable television. One of the few economic truths we have been able to discover is that the cost of cable television is high for families who are poor. After surveying the disadvantaged areas of the city, an arrangement was made with Tele-Cable of Winston-Salem.[1] Certain blocks of streets were designated experimental, and cable was introduced to all eligible homes free of charge to the occupants. (Note that eligible meant that a 3- through 5-year-old child who did not attend preschool or Head Start was resident in that home.) Other blocks in areas similarly disadvantaged were enumerated, and the eligible children living in those non-cable areas became the control children.

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[1] We wish to thank Mr. Bryan McMurry of Tele-Cable of Winston-Salem for his generosity and sense of public service. This company contributed handsomely to the success of this evaluation by donating three months cable rent for over 100 families in the experimental section of the sample.

Los Angeles provided the second site for the New Study. While Los Angeles received Sesame Street during the first year of the show, it was telecast on KCET Channel 28, a UHF station. Surveys indicate that UHF station telecasts attain markedly lower audience levels than VHF telecasts. Thus in the huge market covered by KCET, there was a large number of target children who had not viewed in the first year. This was confirmed by a house-to-house enumeration conducted in several Los Angeles ghetto areas in the summer of 1970 by the Institute for Educational Development (IED). IED cooperated with ETS by providing needed data to establish a pool of eligible subjects.[1] the list was rechecked and additional enumeration was performed as needed. The children within each of the several ghetto areas[2] were then randomly assigned to experimental (encouraged) or control (not-encouraged) conditions. Those encouraged children who could not receive UHF stations on their televisions (about 15 percent) had adaptors installed at no cost to the family. No difficulty was experienced in obtaining the cooperation of the parents. However, in the Spanish-speaking community, some difficulty was encountered despite the use of community members as staff.

The children in the New Study cannot be construed as a national probability sample of disadvantaged children. Constraints such as those imposed by the show being in its second year and by cost factors led us simply to choose groups of children who fitted the major criteria of the target populations. The allocation to experimental and control conditions was a random one, but the overall results must not be interpreted as being technically sophisticated population estimates.

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[1] We wish to thank Dr. Robert Filep, Vice President of IED, for his ready cooperation.

[2] The areas included East Los Angeles, Watts, Compton, and El Monte.

2. The Follow-up Study. The major goal of the Follow-up Study was to assess the continuing effects of viewing over a two year period on the at-home, urban, disadvantaged children from the first year sample. The decision was made to retain from the first year study all three sites where disadvantaged urban children had been sampled. These were Boston, Massachusetts, Durham, North Carolina, and Phoenix, Arizona. All at-home children from the first year study who could be located were included in the Follow-up Study. All children continued to be encouraged or not-encouraged as originally determined at the beginning of the first year.

Children in both studies were pretested in October and November, 1970 and posttested in May, 1971. Their mothers were asked to fill in background information at the same time. Various other measures including amount of viewing assessments were also obtained and these will all be described in subsequent pages.

B. The Treatment

Children in the Follow-up Study had been randomly assigned to encouraged (experimental) and not-encouraged (control) conditions prior to the first year of Sesame Street. Children in the New Study were also randomly assigned to these two conditions prior to the second year of Sesame Street.

All children who were encouraged to view the show were visited once a month by testers who told the parents and children about the show and its importance for all preschool-aged children. The testers distributed CTW publicity materials to all encouraged parents and gave Sesame Street buttons and other souvenirs to the children. In Los Angeles and Winston-Salem, the homes of encouraged children were given the capability of receiving the show, if the capability was not already there, by installing UHF adapters or by arranging for a cable to be brought into the home. As will be shown in Chapter III, encouragement had the desired major influence, almost all encouraged children becoming viewers of Sesame Street.

The not-encouraged parents in all sites were told that ETS was conducting a survey of children's television viewing habits. Testers visited the not-encouraged homes once a month to collect viewing data, but Sesame Street was not mentioned to these parents. The not-encouragement came in the form of not mentioning the show, rather than in any active effort to discourage viewing.

C. Measuring Instruments

1. General Considerations. The measuring instruments for the second year's evaluation were built on the instruments used in the first year study. For the first year, a large number of variables had to be measured. Due to the paucity of relevant, previously developed measures, a variety of instruments was developed and adapted. We were working under a number of constraints, including the age of the children to be tested, the lack of testing experience of the community people we employed, and the limited time available because of the airing of the show in early November. In addition to the tests needed for the children, we also had the problems of measuring such variables as amount of viewing by the children, of obtaining background information on the children's families and homes, and of codifying the content of Sesame Street when aired.

The measuring instruments for the second year's evaluation were built on the successes and experiences of the first year's efforts. In general, we learned that it is indeed practicable to employ people, inexperienced in testing procedures, to work with young children. Indeed they were a positive advantage when it came to gaining parental cooperation in supplying information about themselves and their children and in maintaining a working relationship with the children's parents. On the other hand, we learned that controlling children's behavior, in this case viewing behavior, was most difficult and that obtaining accurate measures of children's viewing behavior was equally troublesome.

These previous experiences were all factors in the development of the second year's measuring instruments.

2. Tests of the Children

The first year of Sesame Street necessitated working with relatively untrained testers, with large numbers of young children who had never had preschool experiences or test experiences of any kind, and in makeshift circumstances in the homes of the children. The decision to use untrained testers and to deal with a large number of children was made with research design considerations and ghetto conditions in mind. Testing was conducted in the children's own homes since we felt that the most valid test behavior would result from testing children in a familiar environment. However, each of these decisions presented other problems. Testing materials had to be kept simple since testers had to transport all materials to the children's homes. Since testing had to be done in a short amount of time and tests had to be given individually, many testers had to be employed. And the test items had to be designed as simply as possible so as not to place improper time and attention demands on young children and on the testers.

All of these problems existed during both the first and second years of the study, and solutions found in the first year were carried through. The general technique adopted for the tests involved graphic representations being shown to the child and described by the tester. The child was then asked to respond to a question about the pictures, usually by pointing. The child's response was never dependent on his own interpretation of any picture unless this interpretation was itself being tested. And the child's response was not dependent on his ability to verbalize unless the goal being assessed specified verbalization. The type of question was kept constant throughout the battery so that answers were not blocked by failures to understand changing rules of the game.

The child's and tester's inexperience were kept in mind throughout the test construction. Formats were kept simple: each test, its manual, and answer sheet were color-coded; each child had a single set of answer sheets permanently attached to a cover page containing basic demographic data on the child to be tested; all tests and manuals were packaged in two binders to facilitate handling of materials and to reduce manipulation of materials during the testing. Thus, testers were able to concentrate on the child taking the test rather than on the mechanics of test administration.

The tests were developed to assess progress in certain goal areas of the show. Appendix B contains a listing of the major goals of the second season of Sesame Street. Not every goal of either season of the show could be assessed, nor could tests be developed to cover every goal in the time available. Reliable measures for each goal would require tests that would take too long to administer to preschool-aged children. Therefore, certain goals that were of primary concern to the producers and researchers at CTW became the focus of the test construction. These goals are asterisked in the listing of goal areas.

It has been pointed out that the tests for the second year's evaluation were based on those developed for the first year's evaluation. The tests developed for the first year's evaluation had been subjected to intensive development procedures. All items were pilot tested on small groups of children and were reviewed by test consultants. The tests were also pretested jointly by ETS and CTW staff members during a July, 1969 try-out of five trial Sesame Street shows in Philadelphia. These reviews and the try-out resulted in substantial revisions in the tests' packaging and minor revisions in certain subtests. The second year's evaluation had two emphases. These were to follow some of the children involved in the first year study and to study the effects of the new show on children who had not viewed the first season. This necessitated a three-fold purpose for the tests: new items and tests needed to be developed to assess new goals of the show; old items and tests needed to be included to ascertain the effectiveness of old goals on new Sesame Street viewers; and new items and tests needed to be developed to assess some of the goals of the first year that either were not assessed then or whose assessment was inconclusive. Of the 63 specific goals[1] of the show, tests were developed to measure achievement in 29 goals areas.

The revisions and additions to the tests were again subjected to review and to pilot testing. For the most part, test construction during the second year was a relatively simple matter as we had learned much about the tests and about the children to be tested from the first year. However, one area that required much work was attitude assessment. Although not specifically stated as a goal of the show, the underlying hope of Sesame Street has been to make children better prepared for school, in cognitive, social, and attitudinal areas. Our evaluation of the first year of Sesame Street had deliberately focussed on cognitive effects since these were the major emphases of the show. However, in 1970, CTW commissioned a group of researchers in Oregon to begin formative research in the social area. As well, ETS requested permission to include an attitudinal measure in the battery of tests for the second year evaluation. Permission was granted, conditional upon the test focussing on those parts of the attitudinal domain that Sesame Street might reasonably be expected to influence (e.g., attitudes to school and school-related activities). While it might have been preferable to have included, as a type of control, items assessing attitudes unlikely to be influenced, ETS nonetheless proceeded to develop an attitude measure which was named The Emotions Test. This test was developed in an attempt to measure certain attitudes of the children, and it drew from the experiences of other test developers and from knowledge gained in pilot testing various instruments, both self-report and projective. A detailed description of each test and subtest including The Emotion Test appears as Appendix D.

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[1] Appendix B is a detailed listing of the show's goals.

The total pretest battery took an average of two hours to administer. The posttest battery was identical to the pretest battery and took a little less time to give, on the average, since all children were six months older and had had the pretest experience. A tester worked with a child individually usually in two or three sessions, using his own judgment about the child's attention to determine the length of each session. The tests were not timed so that speed of response was not a factor affecting a child's score. Almost all children who were tested were completely tested.

Table 8 indicates the tests and subtests administered in the pretesting and provides relevant data from the pretesting. These data are reported separately for each of the three groups of children of concern in the evaluation. It can be seen that there was little problem of ceiling effect except in some areas for the Follow-up group who were considerably older and who had watched Sesame Street the previous year. Reliabilities[1] were generally very high. The Peabody Picture Vocabulary Test (PPVT) was included in order to assess the level of vocabulary and to compare this sample with other children. The PPVT is a standardized test and has been used in many previous studies including the first year evaluation of Sesame Street. The Sesame Street Test was used to assess the child's knowledge of the characters on the show. Unlike the first year's analyses, the child's score was not used as part of the index to determine the amount of the child's viewing of Sesame Street. Rather, it was used as a validation check of his other viewing scores. (See section IB 2 for a discussion of the problems involved in using the test as part of the viewing index.) A more complete description of viewing scores can be found in Section IIB 4.

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[1] The reliabilities were calculated using Kuder-Richardson Formula 20.

Table 9 lists the relevant data from the posttest battery. The tests given at posttest time were identical to those given at pretest time with one addition. It was felt that a measure of how much English and how much Spanish were spoken by each child in the Spanish Study was needed. Therefore, in addition to the PPVT in English, each child of Spanish background in Los Angeles was given a Spanish translation of a different form of the PPVT. This test is, of course, not normed and is meant to serve only as a rough idea of the amount of Spanish spoken by the children.

Table 10 presents the intercorrelations obtained among the battery subtests at pretest and at posttest for the New Study groups, and Table 11 presents the intercorrelations for the Follow-up group. A number of points might be noted from studying the correlation tables. Some of the more important include:

The Sesame Street Test (indicating amount of viewing) correlated in the New Study only .06 with total score at pretest but correlated .50 at posttest. This suggests the validity of our second year survey data which indicated that the New Study sampled children had not viewed in the first year. It also suggests that viewing is associated with final status on the criterion measures — but it should be emphasized that this is at most a suggested relationship that should be guardedly interpreted in light of the fact that, after viewing, the Sesame Street Test score could be a confounding of amount of viewing and speed of learning (see Chapter I). Of course, the major thrust of the analysis in Chapter III will be to investigate whether the relationship between viewing and learning, as suggested by the correlations discussed in this paragraph, is a substantiated and causal relationship.

The correlations among the attitude measures and the cognitive measures in pretest and posttest matrices for both studies are low. This is to be expected in light of theory and research. However, it is of considerable interest that of the three attitudes measured, attitude to school correlates most highly with the cognitive measures. This is an indication that positive attitude to school is associated with being capable at school-related activities. While this is not a wholly unexpected association, it supports one of CTW's assumptions that when children develop certain cognitive skills and learn a core of basic knowledge, their attitudes to school become more positive. The actual testing of this assumption occurs more clearly in the longitudinal (Follow-up) study in Chapter III. Note that correlations between attitude to school and gain scores were generally low but positive for encouraged children (See Appendix J).

Intercorrelations among the cognitive measures were generally moderate to high with slight increases at posttest for those measures where learning had occurred but which were operating only at chance level at pretest. The correlations of some of the subscores with total score were very high. For example, Naming Letters (eight items) correlated .80 with total score (214 items),[1] and Sorting (16 items) correlated .87 with total score at posttest for the Follow-up group. These relatively high intercorrelations substantiate the primary conclusion drawn from the factor analyses performed with the first year data — that a general factor, though it was not the only factor, seems to account for much of the variability within the cognitive domain in the sampled children.

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[1] Note that the subscore items are also part of the total score, thereby elevating the correlations somewhat.

3. Parent Questionnaires

A questionnaire was developed and distributed to a parent of each of the children at pretest time in order to obtain descriptions of the children and their home backgrounds. A similar questionnaire was distributed at posttest time primarily to measure side effects from the viewing of *Sesame Street*. Each parent was paid $3.00 for completing each questionnaire, and a response rate of over 95 percent was obtained for both the pretest and posttest questionnaires. The questionnaires were completed in private unless help was requested by the parent or unless a parent obviously required assistance. The pretest Parent Questionnaire measured such variables as the parental level of aspiration for the child, parent affluence indices, parental attitudes to education, TV viewing habits of the child, and socioeconomic status of the family. A copy of the pretest Parent Questionnaire is presented as Appendix E. Only Part I was given to the parents of the New Study and Spanish children.[1] Part II of the pretest questionnaire enabled us to find out about the *Sesame Street* viewing habits of the children and was given only to parents of the Follow-up children since, as a condition for being included, the New Study children had not been *Sesame Street* viewers in the first year.

To assess socioeconomic status, the two approaches taken in the first year evaluation were continued. First, as complete a description as possible of the children's socioeconomic background was provided. Thus, descriptive profiles of the children include estimates of the material possessions of the child, the educational experiences provided in the home, the material possessions of the child's family, the educational attainments of the parents, the type and level of employment of the parents, the number of people living in the child's home, and the number of rooms in the child's home.

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[1] The Parent Questionnaires were translated into Spanish and the translation was available for those preferring it.

As well as this descriptive approach, it was necessary to derive one index for SES to be used in the analyses. One relevant index of SES that differentiates among the children in our sample and is relatively highly correlated with other indices of SES is the level of education of the parents. Where this information was available for both parents, the mean of the two assessments was used.

A more subjective but equally useful approach to SES concerns our initial selection of sites. In the New Study, we worked in sites that contain lower SES areas. The children in the Follow-up Study were from the three sites that also contained primarily disadvantaged children. As a result, all our groups were sampled from poverty areas (see descriptive data -- Chapter III), and the SES index was used to differentiate levels of SES within a disadvantaged population.

The posttest Parent Questionnaire appears as Appendix F and is a shortened version of the pretest questionnaire. All parents were given Parts I and II. This questionnaire provided data on some variables measured earlier and assessed whether there had been certain side effects associated with Sesame Street viewing. Secondly, the questionnaire was concerned with the Sesame Street viewing habits of the children.

Six indices were developed from responses to certain groupings of items in the Parent Questionnaires. These were:

Parent Expectation Index, obtained by combining responses to items 14 and 38 on the pretest questionnaire and items 11 and 22 on the posttest questionnaire. Rational weightings were used to discriminate response levels. This index attempts to measure parental level of aspiration for their children.

Child Affluence Index, obtained by adding the yes responses to pretest item 15 and, on the posttest, to item 12. It attempts to measure the children's personal possessions.

Educational Uses Index, obtained by adding the weighted responses to pretest item 16 and, on the posttest, to item 13. It attempts to measure the extent to which the children were exposed to educational facilities available outside the home.

Parent Affluence Index, obtained by adding the yes responses to pretest item 17. It attempts to measure the material affluence of the children's homes.

Socioeconomic Status Index (SES), obtained by averaging the number of years of formal education of the child's mother and father (pretest items 18 and 21). It attempts to measure the concept of social class in addition to the more specific goal of discovering the educational level of the parents.

School Expectation Index, obtained by adding the weighted responses to pretest items 32 through 37 and, on the posttest, to items 16 through 21. It attempts to measure how successful the parents think their children will be in school.

4. Viewing Records

The assessment of the amount each child watched Sesame Street was vital to the evaluation. Children were randomly assigned to encouraged or not-encouraged conditions, but there was no guarantee that encouraged children would actually watch or that not-encouraged children would not. Indeed our experiences from the first year taught us that although encouragement was a factor influencing amount of viewing, it certainly was not the only factor. (These problems have been discussed in section IB2 above.) While it was expected that changes in the site selection and the use of cable and UHF stations would solve the problem, it was still essential to assess amount of viewing.

Amount of viewing is an extremely difficult variable to measure. Even if we had had the money to employ sophisticated mechanical techniques such as the large rating organizations use, the actual amount of viewing (as opposed to the amount of time the set was turned on) could have been assessed with accuracy only with the employment of people full time to follow each child around daily (and then someone would be bound to point out that the intrusiveness of the observer would invalidate the assessment).

Given the limitations in our capabilities and in the state of the art generally, our approach was to prepare an index based on two measures.

a. From the posttest Parent Questionnaire, a score was derived from the parent's responses to four questions. (See Appendix F.)

35. Which of the following TV shows does your child watch?

36. Does your child ever watch the TV show Sesame Street?

37. (If yes) About how many times a week does your child watch Sesame Street?

38. About how much of each Sesame Street show does he usually watch?

The answers to these questions were weighted for a total maximum score of 10 and a minimum score of 0. The follow-up children's parents were also asked these questions in the pretest questionnaire to enable an estimation of the amount of Sesame Street viewing during the previous summer.

b. From the viewing records, a score was derived. About once a month a parent of each child was given a viewing record on which to indicate which TV shows the child watched on a particular day and how many times they were watched that day. The viewing record scores for each child were divided by the number of records available. (See Appendix G.)

For the New Study and the Spanish Study, scores from the Parent Questionnaires and the viewing records were converted to Z scores (with a mean of 0 and a standard deviation of 1) and combined, allowing the two sources of information to be weighted equally.

A few children who were pretested and posttested had no Parent Questionnaires or viewing records. In these few cases, the Sesame Street test was used to estimate viewing. Children who scored four or less on the test were considered non-viewers. Children who scored five or more were included in the low viewing group.

For the Follow-up Study, the viewing scores were combined as they had been in the first year of the study in order to insure consistency and comparability. Thus, Parent Questionnaire scores and viewing scores were converted to percentages and combined with a weighting of one given to each measure.

5. Content Analysis

In order to relate the performance of children to Sesame Street in a meaningful way, a detailed analysis of the content of the show was conducted. Every 30 seconds of every show, a note was made as to the specific goal being taught (goals 01-99) and the specific television technique being used to teach that goal (techniques 01-58). In this way, the amount of time devoted to each goal and to the various presentation techniques can be described. (See Appendix H for the actual scheme used to classify goals and techniques). These data were subsequently related to test data on amount of learning. Although these relationships cannot be interpreted as causal, they hopefully provide insights for future production and research.

The content analysis is identical to the one performed last year for the first season of Sesame Street. Therefore, comparisons between the two years in terms of content and learning are possible.

6. Teacher Ranking Questionnaires

The teachers of those follow-up children who began attending school in the fall of 1970 completed questionnaires to obtain teachers' ranking of the children. Teachers of classes in which any of the follow-up subjects were enrolled were asked to rank all of their students according to each of the following seven (pretest) or eight (posttest) dimensions: general readiness for school, verbal readiness, quantitative readiness, general intelligence, attitude toward school, relationships with peers, motor coordination, and cooperation (posttest only). Teachers were not told the purpose of the rankings and were not told which children were of particular interest to the researchers. The actual scales along with the instructions supplied the teachers appear in Appendix I.

The choice of the particular variables was made both on the basis of results of a content analysis of teacher ratings of early school readiness and on the need to assess the students in terms of some of the goals of Sesame Street. The survey of teacher ratings of early school readiness was conducted by an ETS staff member for another purpose.[1] It involved a national sample of about 250 first grade teachers. The teachers were asked first to make judgments about the degree to which each of their 7000 students was "ready" for school, and then to substantiate the judgments with behavior descriptions. The descriptions were then classified by independent raters into ten categories. The ten categories included the following: verbal skills and understandings, graphic skills, performing arts skills, general intellectual functioning, attitudes toward school and school work, conformity to classroom procedures, personal emotional development, peer relationships, and motor coordination and physical condition.

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[1] Anderson, Scarvia. The Making of a Pupil: Changing Children into School Children. Susan Colver Rosenberg Lecture, University of Chicago, July 17, 1968.

The categories were reexamined with an eye to the Sesame Street objectives. Graphic skills, performing arts skills, conformity to classroom procedures, and personal emotional development were eliminated entirely. Verbal and quantitative readiness, it was reasoned, should definitely have been enhanced by the learnings fostered by Sesame Street, if the show were to consider itself successful. Motor coordination, of course, should not. General intelligence and attitude toward school (or at least teachers' perceptions of these) are gray areas and, as such, are of considerable interest to the evaluators. No direct attempts were made on Sesame Street to improve children's attitudes toward school; on the other hand, one of the show's major general concerns was to engender interest in and regard for learning. Besides, it was argued that if a child comes to school with knowledge of letters and numbers and with an ability to use relational terms and to classify and sort pictures, he might be more likely to regard his school experiences positively. They would make sense to him, being relatable to past experiences.

One additional goal of Sesame Street was in the area of cooperation. No attempt had been made to evaluate this goal in any of the children's tests. Cooperation was added to the posttest teacher rankings since the second season of the show attempted to foster this behavior in its viewers.

The decision to have teachers rank-order the children rather than use some sort of absolute rating scale was based on methodological considerations. It was felt that the rank-ordering procedure would avoid tie scores and would therefore provide more variance among the resulting scores. In all, the teachers were quite cooperative once general permission had been obtained from the school systems involved to proceed with the research. The rankings of the subject children were converted into centiles.*

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*The centile rank of a test score indicates what percent of the scores in a particular set of scores falls below the midpoint of the score interval. A centile rank is determined solely by the relation between a particular individual's score and the scores of the other individuals in the group being tested (or, in this case, ranked). Centile ranks, therefore, range from near 0 to near 100 regardless of whether the group as a whole does "well" or "poorly." In this way, the rankings of children by different teachers are rendered comparable with one another, despite variations in schools and classrooms, and in the range of abilities represented by the students themselves. Centile ranks can be averaged, just as any other set of ranks can. The resulting average is a kind of composite score. See Ebel, Robert L. Measuring Educational Achievement. Englewood Cliffs, New Jersey: Prentice-Hall, 1965. Pp. 251-259.

C. Field Operations

Operations in the field during the second year of the study were simplified by three factors. First, part of the study involved following some of the children included in the first year's evaluation, and we reemployed local coordinators and testers in Boston, Durham, and Phoenix. Second, our second year study in all sites involved working with children who were not attending preschool, so that we did relatively little work in schools. And third, we had gained much experience from our first year work, and much of the second year study involved refinements and adaptions of techniques and instruments used in the first year.

Since in the New Study we were not evaluating the use of Sesame Street in the schools, we did not work through local school agencies. Rather we approached selected community agencies and secured their cooperation to work with children and their parents in Los Angeles, California and Winston-Salem, North Carolina. In both sites our initial act was to appoint a local coordinator to conduct and supervise our field operations. The coordinator's job in these new sites, as in our three Follow-up Study sites, included hiring and supervising indigenous community members who collected the data. The coordinator was also responsible for selecting the sample of children, supervising the collection of child and parent data, handling all fiscal matters related to field operations, maintaining public relations with the local community, and coordinating all field work with the ETS staff. In addition, the coordinators in the three Follow-up Study sites were responsible for collecting some data from teachers of those children who had begun school.

The selection of a local staff was the first duty of each local coordinator, and it often proved to be a continuing duty. The majority of the staff in each site consisted of housewives, many of whom had less than a high school education, some of whom were on welfare, and most of whom had had no experience with working with children other than their own. Some of the staff were college students who lived in the local area, and others were children and husbands who became interested in the project through their mothers and wives.

In Los Angeles and Winston-Salem, the staff was trained to conduct the door-to-door convassing to secure a sample. In all sites, the staff was trained in a two-day workshop to administer the pretest and post-test batteries.

One of the most difficult and most important aspects of field work is ensuring a high quality of data. Every effort was made to minimize the possibilities of faulty data being used. Testers in every site were trained by ETS staff members and were observed by ETS staff while testing each other during training. Testers were also observed by the coordinator while testing a child in the study. The coordinator checked all tests before sending them to ETS. Each test was carefully checked at ETS before being keypunched. And preliminary analyses were run on the tests of each tester.

In the pretesting, 858 tests were received from the five sites. Of these, 148 were rejected from Los Angeles and Winston-Salem. Fifty tests were rejected when it was discovered from a child's Parent Questionnaire that the child was attending school or from a child's test that the child was already a Sesame Street viewer. The following listing presents some details on the tests rejected for these reasons:

	Los Angeles	Winston-Salem
In school	21	2
Sesame Street viewer	22	5

Another 16 tests were rejected from these two sites because parents who initially had agreed to cooperate subsequently changed their minds or moved during or immediately after testing. In addition, 82 pretests from Winston-Salem were rejected when it was discovered that four testers had administered some tests improperly. When more than one test administered by a particular tester was found to be defective, all of the tests administered by that person were rejected. Thus, not all of the 82 rejected tests were defective, but we felt it preferable to reject some good tests rather than accept some bad ones. In all, 710 children were completely and acceptably pretested. 632 of these children were posttested, and none of the posttests was rejected.

A descriptive categorization of the children for whom complete and acceptable pretest and posttest data were obtained is presented in Table 12. The basic expectations of the sample were met except in the New Study where a higher proportion of black children was obtained in Los Angeles than had been originally anticipated.

Between the periods of pretesting and posttesting, the field staff in each site collected viewing records from the parents of each child. The vast majority of the more than 50 people employed worked hard and extremely well, and the work in every site was virtually free of problems, in large measure a tribute to the fine work of the local coordinators.

This chapter has described the sampling procedures and selection of sites and children, the measuring instruments used, and the field operations that brought the children's behavior in quantifiable form to ETS. The next chapter will present the results.

CHAPTER III. RESULTS

This chapter will report on the analyses of the data collected from the children and their parents before, during, and after the six months of the second season of Sesame Street. The analyses were performed in order to answer a number of questions posed in the ETS proposal for the evaluation (August, 1970).

It should be noted that the evaluation of the second year of Sesame Street is concerned with three groups of children. The first group is 3-, 4-, and 5-year-old low income inner-city children who did not watch Sesame Street during its first year and who did not attend preschool (The New Study). This group was studied in an attempt to answer the following general questions:

1) How effective is the second year of Sesame Street for disadvantaged preschool-aged children in their own homes?
2) What are the effects of such variables as the age, sex, socio-economic background, and level of achievement of the children?

The second group involved in the evaluation is low-income children with Spanish surnames from Spanish backgrounds. They can be considered as a sub-group of the New Study. They did not watch Sesame Street during its first season. They were studied in order to answer the following general question:

1) Do children with Spanish backgrounds benefit from Sesame Street?

The third group is low income inner-city children who were a part of the first year's at-home sample from Boston, Durham, and Phoenix. They were studied for a second year to answer the following questions:

1) What are the effects on children who watched the first year of Sesame Street at home and watch the second year of Sesame Street at home?
2) What are the effects on children who watched the first year of Sesame Street at home and subsequently attend school?

The results presented in this chapter are preceded by the content analysis of Sesame Street (Section A). The last three sections (B-D) present the analyses separately for each group of children described above. The first part of each section will present mainly descriptive data and will be followed by statistical analyses.

It should be noted that this chapter does not include an exhaustive set of analyses. The amount and complexity of the data preclude this. In addition, a number of worthwhile questions that arise from reading the results may not be answered due to time limitations in getting the report to press. However, as with the first year's data, further analyses and reports will be made.[1]

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[1] See Chapter 1 Section B2 for some of the analyses run on the first year's data following publication of the first year report.

A. Content Analysis of Sesame Street

An analysis of the content of Sesame Street was conducted independently by ETS. Every 30 seconds of each of the 145 shows, a judgment was made as to the goal being taught and the technique used to teach the goal. A similar analysis of the 130 shows of the first year of Sesame Street was made during the evaluation of the show's first season. These analyses make possible a description of the actual output of the show.

Table 13 indicates the number of times and the percentage of time each goal area was observed during each of the two years. The two goal areas of pre-reading (letters and words combined) and numbers were treated 18.8 percent of the time and 10.9 percent respectively, accounting for almost 30 percent of the show in the second year. Entertainment on the show, when no goal area was being directly taught, accounted for over 20 percent of the time, so that one half hour a day was left to be divided among the rest of the cognitive goals, except pre-reading and numbers, and among all the social, attitudinal, and emotional goals. In terms of time, then, the primary focus of the show was on letters and numbers.

Despite the fact that the number of goals was increased for the second year by Children's Television Workshop, there is a great similarity in the amount of time spent on most of the goals that were common to the two years of the show. This is especially true when goals are combined into larger groupings reflecting their main emphasis. For example, the percentage of time spent on the combined goals for letters, numbers, geometric forms, relational terms, self, social units, and the man-made environment was very similar in the two years. Within each of these combined goal areas there are differences reflecting the changed emphases and broader goals of the second year. Notably, in the area of numbers, the percentage of time for the combined goals was the same, but there were many more goals in the second year so that much less time was spent on any one of the goals in the numbers area. Specific goals that were treated less often in the second year include sounds of letters, recitation of numbers 1 - 10, body parts, and the family and home.

The expansion of goals in the second year necessitated reducing the amount of time spent on certain goal areas. In the second year, less time was spent on such goal areas as sorting skills, reasoning and problem solving (due to the absence of Buddy and Jim), and the natural environment (due to the absence of live animals on every show). In addition, many of the expanded goals were given relatively little time. For example, the eight new goals in the area of numbers were treated for a total of 3.9 percent of the time, and multiple classification and regrouping only .5 percent. Goal areas that received more time in the second year include the goal area of words (which was not treated at all in the first year), perceptual discrimination, classification, and social interactions. In terms of time, the greatest change from the first year occurred in the area of words, with 4.5 percent of the time being devoted to the two new goals of decoding and sight vocabulary.

Table 14 takes those goals treated more than one percent of the total time and indicates the techniques used to present each of these goals. Animation was a primary technique used in 15 of the 30 goals and contributed to more than 40 percent of the time spent teaching recognition and naming of letters, letter sounds, initial sounds, and recognition and recitation of numbers. The Muppets were the primary means of presenting goals dealing with decoding, word recognition, defining subsets, labeling forms, sound identification, positional relational terms, antecedent and consequent events, the mind and its powers, body parts, emotions, and differing perspectives. The Muppets were used substantially to teach all goals except plants and animals. Their role was central to the teaching of cognitive processes, social relations, and emotions, and their use was expanded, both in amount of time and in their coverage of goal areas, over the first year. People on set or on film were used most in connection with recitation of the alphabet, Spanish vocabulary, cooperation, buildings and structures, and educational goals of the program other than those specified in the goals statement.

Table 15 presents the techniques employed more than one percent of the time and indicates the goals being taught by each technique. Muppets, people, animation, and film were the major techniques used, with the Muppets alone or in combination with other techniques accounting for 45 percent of the show. It can be seen that different techniques were used to teach different goals. In general, for a given goal, one of the techniques predominated strongly over the other three. For example, animation was used primarily in the goal areas related to numbers and letters; Muppets were employed primarily as an entertainment factor and to teach many of the new goal areas such as decoding and word recognition; people were used mainly in areas that seem most appropriate for their use, such as cooperation and Spanish vocabulary;

film was employed to deal with areas beyond the scope of the Sesame Street set such as the natural and man-made environments.

A comparison of the techniques used in the two years of the show reveals some substantial changes in the presentation of material on Sesame Street. The following presents some of the more important changes:

Treatment	Year I	Year II	Change from I to II
People alone	23.4%	18.4%	- 5.0%
Muppets	16.5	32.3	+15.8
People & Muppets	8.0	12.6	+ 4.6
Animation	15.0	13.9	- 1.1
Film alone and with People	12.4	9.0	- 3.4

The greatest change occurred in the percentage of time the Muppets were on the show, with an increase from 24.5 percent to 44.9 percent. The amount of time people were on the set or on film decreased, with eight percent less of the show featuring people.

The content analysis of Sesame Street becomes more useful as we look at the data from the children's tests and the parents' questionnaires.

B. Analyses of the New Study

The results presented in this section of the report concern the new sample of low income inner-city children from Los Angeles and Winston-Salem. The children in the New Study were 3-, 4-, and 5-year-olds who had not watched Sesame Street during its first year and who had had no preschool experiences. The demographic composition of the 283 children who comprised the New Study sample was presented in Section II A3 (see Table 12).

The analyses of the New Study will concern results obtained from the children's pretests, posttests, and parent questionnaires. They will be presented first of all in terms of the major independent variable of encouragement to view. Simple descriptive analyses and more complex inferential statistics will be presented in order to discover the effects of Sesame Street. Further topics to be discussed in Section B of this chapter include the influences of the age and the sex of the viewer on the effects of Sesame Street.

New Study Children Described in Detail

Before presenting the results of this evaluation, it is necessary to present a detailed description of our sample, not only as a basis for the following data analyses but also as an indication of the beginning levels of performance and the home backgrounds of the 3- through 5-year-old disadvantaged children in our sample.

From Table 16 it can be seen that the children at pretest performed at about chance level on about half of the subtests used to assess goal areas in the cognitive domain, namely: matching by position, recognizing letters, naming letters, letter sounds, initial sounds, decoding, reading, recognizing numbers, naming numbers, conservation, number/numeral correspondence, addition and subtraction, and double classification.

The level of education of the parents is a useful indicator of the socioeconomic background of the children in the New Study. In our society, the level of education of parents is moderately correlated with their monetary income and job level and with the levels of achievement their children will obtain in school. The educational levels of the parents of our sampled children can be compared with the national figures for their relevant age group:

	New Study Sample		
	Mother	Male Head of House	National Population[1]
Percent graduating from high school	45%	45%	70%
Percent going on to college	11	12	38.5

Further, an examination of the actual responses to the question "What was the last grade in school that you completed?" indicates that 15 percent of the mothers and 18 percent of the male heads of households had no more than an eighth grade education. One-third of the mothers reported at pretest that they read to their children no more than once a week. Less than one-third of the mothers expected their children to go beyond a high school education, and only about 12 percent expected their children to get a college degree. The general picture then is that the children in this study came from families which had limited educational expectations for them. Further, the children's educational experiences and attainments clearly mark our sample as disadvantaged.

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[1] For those aged 26 in 1971, extrapolated from Statistics of Trends in Education 1959-60 to 1979-80, NCES, Office of Education, U.S. Dept. of H.E.W. OE 10068-71, March, 1971.

1. Results of All Not-encouraged and Encouraged Children

As was described in Chapter II, the sample children were allocated to encouraged to view or not encouraged to view conditions. The most important question to be asked at this point is whether this experimental manipulation worked. That is, did the encouraged children view and did the not-encouraged children not view?

An examination of the amount of viewing index (described in Chapter II) indicates that the encouraged children had a much higher mean score than the not-encouraged children, but the figures themselves do not constitute a meaningful scale. In more readily interpretable terms, only seven percent of the encouraged children did not view the show (nine of the 130 children in the experimental group); but 65 percent of the not-encouraged group were non-viewers (99 of the 153 children in the control group). Furthermore, if a child did view Sesame Street, he was more likely to view frequently (four times per week) if he was from the encouraged group. Of the 121 viewers in the encouraged group, 64 percent were frequent viewers. Of the 54 viewers in the not-encouraged group, only 15 percent were frequent viewers. Finally, 72 percent of the encouraged children who viewed usually watched all of a particular show, whereas, for the not-encouraged, the viewers usually watched only about half of each show.

In short, the experimental manipulation worked, and there is a clear difference between the two groups with respect to the variable vital to this study -- amount of viewing. Note however, that the encouraged and not-encouraged comparisons will be a conservative estimate of what would happen if the encouraged children were all heavy viewers and the not-encouraged children were all non-viewers.

A second introductory question that has to be asked concerns the comparability of the encouraged and the not-encouraged groups. If the random allocation of subjects to these conditions were carried out adequately, and if the loss of subjects due to normal attrition were similar for both groups, then we could expect to have comparable groups for purposes of the study.

Table 16 presents the test data collapsed across the two sites at pretest and the gain scores to posttest for not-encouraged and encouraged children. From Table 16 it can be seen that the two groups were quite similar in virtually all respects at pretest. To abstract some important figures from the pretest data:

	Not-encouraged	Encouraged
Grand Total (214 items)	71.7	67.3
Chronological Age (months)	48.9	49.9
Peabody Mental Age	35.9	35.9

None of the differences are statistically significant.

Tables 17 and 18 present relevant data from the parent questionnaire responses, and they indicate the similarity of the two groups. On each scale (parent expectation, child affluence, child educational usage, parent affluence, years of parent education, and school expectation) there was no significant difference at pretest. In terms of responses to 23 selected items (Table 18), only one showed significant differences at the .05 level between encouraged and not-encouraged groups, with another two possibly being significant though low cell frequencies prevent an exact test of significance being conducted. One significant difference over 23 tests of significance may be merely the manifestation of chance. Thus, Tables 16 through 18 indicate that, in general, the assignment of children to encouraged and not-encouraged groups was, for our purposes, quite successful.

a. The Total Test Results

In order to determine the effects of the experimental treatment (encouragement and the subsequent viewing of Sesame Street), a multivariate analysis of variance (MANOVA) of all total test gains was run where encouragement, sex, and age were independent variables (see Table 20). In addition, a multivariate analysis of covariance (MANCOVA) on total test gains for the same independent variables was run where pretest total scores, pretest Peabody IQ, and SES were covariates (see Table 21).

The decision to use gain scores as the dependent variables in the MANOVA was based upon a number of considerations. First it was thought desirable in this report to present a thorough description of the results that would be readily understandable to the reader who did not have a background in statistics. Since simple gains have the virtue of being readily understood, they were used in the descriptive tables and figures. The next question was whether these simple gains were significantly different for the encouraged versus the not-encouraged groups -- and so the MANOVA was carried out on the simple gain scores. However, despite the relatively large number of subjects in the two groups, and despite their close comparability at pretest, some statistically sophisticated critics might object that a better procedure would have been to carry out the analyses based on regressed gain scores or on posttest scores with pretest scores covaried. In order to meet this objection, we also carried out, as we did in the first year, a multivariate analysis of covariance (MANCOVA) in which we entered simple gain scores and included pretest scores as one of the covariates.[1] Note that this is equivalent to the use of posttest scores as the dependent variable covarying pretest scores.

In order to facilitate the interpretations of the MANCOVA, the intercorrelations of pretest scores and gain scores are included as Appendix J. Note that the correlations generally are low and negative due to at least three influences depending upon the particular correlation under consideration. First, a few tests showed ceiling effects so that high scorers at pretest were limited in the gains they could make. Second, the regression phenomenon suggests that high scorers at pretest tend to have high positive error components in their scores while the reverse is true of low scorers at pretest. And third, low scorers at pretest may in fact have learned most during the six months, irrespective of measurement and statistical artifacts. In order to provide some evidence on the relationship between pretest score, pretest Peabody IQ, and SES and the gains of viewers, Appendix J also includes the intercorrelation matrix for the encouraged group separately.

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[1] Pretest PPVT IQ and SES were also included as covariates.

The eight total test gains entered into these analyses were Body Parts, Forms, Pre-reading, Numbers, Relational Terms, Classification, Sorting, and Parts of the Whole. In the MANOVA, gains on Peabody IQ were entered as an independent variable.

Encouragement was a significant effect in both the MANOVA and MANCOVA for the gains on these eight tests overall. The subsequent univariate tests of encouragement indicated significant effects for each of the total test gains except Parts of the Whole. The Peabody IQ was a significant dependent variable.

The overall picture is one in which encouragement was a significant variable affecting the gains of the children. Age was also a significant variable on the MANCOVA and will be discussed in Section B4 of this chapter.

MANOVA's and MANCOVA's were also run on four groups of subtests (See Tables 22-29):

Run 1:	Miscellaneous gain scores on subtests: naming of body parts, function of body parts, naming forms, recognizing forms, roles of community members, matching by form, matching by position, and emotions.
Run 2:	Pre-reading gain scores on subtests: recognizing letters, naming letters, letter sounds, initial sounds, decoding reading, left-right orientation, and alphabet.

Run 3: Numbers gain scores on subtests: recognizing numbers, naming numbers, enumeration, conservation, counting strategies, number/numeral correspondence, addition and subtraction, and counting.

Run 4: Classification gain scores on subtests: classification (single criterion) and double classification.

In all instances where a MANOVA or MANCOVA was carried out and where a dependent variable was seen to be significant, univariate F tests were subsequently performed in order to find out in what specific tests the significant effects were occurring.

The MANOVA's and MANCOVA's for the gains on each of the four runs indicated that encouragement was a significant effect. In addition, age was also a significant variable on each MANCOVA. The univariate tests of encouragement indicating where this effect was occurring will be discussed in the following presentation of each goal area. The effects of age will be presented in Section B4 where the age of the viewer is the focus of discussion.

In order to obtain a picture of the specific effects of the second year of Sesame Street on the new group of children (New Study), the reader should examine the following tables and figures:

-- Table 16 which presents pretest scores and gains for not-encouraged and encouraged children.

-- Tables 17 and 18 which present background information obtained from the Parent Questionnaires at pretest and at posttest for the not-encouraged and encouraged groups.

-- Table 19 which presents item level data at pretest and at posttest for not-encouraged and encouraged children. These data are basic for those who want a detailed view of where the effects of the show are to be found.

-- Tables 20, 22, 24, 26, and 28 which present the multivariate analyses of variance (MANOVA) for the gains on the dependent variables (total and subtest total gains) and where encouragement (encouraged - not encouraged), sex (male-female), and age (3-, 4-, and 5-year-olds) are independent variables.

-- Tables 21, 23, 25, 27, and 29 which present the multivariate analyses of covariance (MANCOVA) for the same dependent and independent variables and where pretest scores, pretest Peabody IQ, and socioeconomic status (SES) are the covariates.

-- Figures 3a and 3b which present graphically the percentage of items answered correctly by the not-encouraged and the encouraged children at pretest and posttest for total scores and selected subscores.

It is of course difficult to keep all fourteen tables and both figures in mind. We will discuss each of the program's goal areas in turn, referring as needed to the relevant tables.

b. Body Parts (See Tables 16, 19, 20, 21, 22, and 23)

About 2.1 percent of the show was devoted to the teaching of the names and functions of body parts. The Body Parts Test comprised 18 items which assessed the child's ability to name or recognize parts of the body and functions of body parts.[1] An abstract from Table 16 shows:

Subtest	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Naming Body Parts	10	7.4	0.8	6.5	2.1
Function	8	4.0	0.6	3.4	2.0
Total	18	11.4	1.4	9.9	4.2

For each subtest considered separately and for the overall total, the encouraged children gained significantly more than the not-encouraged children. After covarying pretest score, Peabody IQ, and SES, the gains on the naming subtest are seen not to be significant. Examination of the data indicates that this lack of significance was probably due to the covariance of the pretest score which had a high negative relationship with gains (r = -.80). Note too that both groups had mean scores at posttest of more than eight correct responses in this ten item subtest, so that ceiling effect was an influence.

At the item level, there were virtually no differences between the encouraged and the not-encouraged children on the five "pointing to" (recognition) items, the greatest difference at posttest being only four percent. However, in the five naming items, the differences ranged from four percent (elbow) to 10 percent (tongue), all favoring the encouraged group.

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[1] Appendix A is a complete listing of the goals of Sesame Street and Appendix D is a detailed description of the tests and subtests used to assess achievement in 29 of the 63 specific goals.

For the eight function items the superior gains of the encouraged group were quite apparent, averaging over 25 percent per item compared with less than eight percent for the not-encouraged group. It is not surprising that this difference in gains proved to be statistically significant.

Note that these results in the second year evaluation differ from those in the first year when learning in the body parts area was found not to be a significant effect of the show. Interestingly a major reason for the improvement in the second year is that the second year sample performed at a somewhat lower pretest level than the first year sample, allowing differential effects in gains to be observed. In fact, the show spent only half the time teaching body parts in the second year than it had in the first year, because, it was argued, disadvantaged children already have basic knowledge in this area. From our observations over the two years, body parts is a curriculum area where a sizable segment of disadvantaged children need help; and Sesame Street seems to be able to help that segment.

c. Geometric Forms (see Tables 16, 19, 20, 21, 22, 23)

About 2.2 percent of the show was spent on teaching geometric forms. The Forms Test comprised eight items, four of which assessed the child's ability to name geometric forms with the other four assessing the child's ability to recognize (point to) geometric forms. An abstract from Table 16 indicates:

Subtest	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Naming Forms	4	1.2	0.1	0.9	1.1
Recognizing Forms	4	1.7	0.4	1.7	0.6
Total	8	2.9	0.5	2.6	1.8

For the overall total and for the naming subtest the gains of the encouraged children were significantly greater than for the not-encouraged children. The difference in gains on the recognition subtest was not significant. These results were maintained after covarying pretest score, Peabody IQ, and SES.

The item level data show that the naming items involved large gains for the encouraged group, the percent correct doubling from pretest to posttest for square (+41 percent), circle (+40 percent), and triangle (+23 percent). The corresponding figures for the not-encouraged group were +10 percent, +10 percent, and -4 percent.

In the recognition subtest, circle was affected by ceiling effect (at posttest 95 percent of the encouraged were correct versus 88 percent of the not-encouraged). For the other three items, the encouraged group averaged an 11 percent gain and the not-encouraged group averaged a seven percent gain. In general, Sesame Street seemed effective in teaching children about geometric forms, the main effect occurring in the child's learning to name the form.

d. Community Members (see Tables 16, 19, 22, 23)

This goal area was not tested in the first year of Sesame Street. In the second year, over two percent of the show dealt with the roles and functions of community members. The subtest contained four items in which the child was asked to identify the artifacts and functions of a fireman and a mailman. Clearly, the test was a limited one, but equally clearly the show had significant effects as assessed by these four items. From Table 16 we note:

Subtest	Number of Items	Not-encouraged		Encouraged	
		Pretest	Gain	Pretest	Gain
Roles of Community Members	4	2.1	0.3	2.0	1.1

The gains of the encouraged children were significantly greater than those of the not-encouraged children. Sesame Street demonstrated its capacity to teach its preschool audience about the roles and functions of certain community members.

e. Matching (see Tables 16, 19, 22, 23)

In its first year, Sesame Street was not found to be effective in this goal area. In the second year about 0.6 percent of the show was spent directly teaching matching (about three-quarters of an hour over the six months). The subtests used to assess gains in the matching area were matching by form (nine items) in which the child matched a letter, number, or word and matching by position (three items) in which the child matched the ordering of three or more objects.

The matching by form subtest was similar to the first year matching test except that it included more difficult items (e.g., matching words and two-digit numbers). This meant that there were no ceiling problems as there had been in the first year.

The matching by position subtest[1] originally comprised four items, but one was deleted due to an error which occurred during our test construction.

Relevant scores on the two matching subtests are here abstracted from Table 16:

		Not-encouraged		Encouraged	
Subtest	Number of Items	Pretest	Gain	Pretest	Gain
Matching by Form	9	4.4	0.2	3.9	1.2
Matching by Position	3	1.1	0.1	1.1	0.2

The encouraged group gained significantly more than the not-encouraged group in the matching by form area (including the covariance analysis). However, matching by position was not a significant effect, with children scoring at about chance level in both groups at both pretest and posttest.

An investigation of which items seem to contribute most to the significant effect in the matching by form subtest indicates that items involving matching of single and double letters and single numbers were primarily responsible. Inasmuch as matching is an important (but not sufficient) skill underlying learning to read, this result seems to suggest the potential of educational television for teaching reading.

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[1] This test was adapted from the ETS Enumeration Test, copyright ETS, 1969. We wish to acknowledge the work of our colleagues, Masako Tanaka and Edward Chittenden, who developed this Enumeration Test and who provided advice in this area.

f. Pre-reading (see Tables 16, 19, 20, 21, 24, 25)

This goal area was heavily stressed during both the first and second years of Sesame Street. However, in the second year, the goal area was expanded to include more subgoals (e.g., decoding, reading words). The overall percentage of time given to pre-reading in the first year was 13.9 percent whereas in the second year it was 18.8 percent.

The following abstract indicates the subtests that were administered in the second year and the pretest levels and gains to posttest of not-encouraged and encouraged children.

Subtest	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Recognizing Letters	4	1.5	0.1	1.2	0.6
Naming Letters	8	0.7	0.6	0.6	1.5
Letter Sounds	4	0.3	0.0	0.2	0.5
Initial Sounds	6	0.7	0.3	1.0	0.4
Decoding	8	1.4	-0.1	1.2	0.3
Reading Words	9	1.3	0.3	1.1	0.8
Left-Right Orientation	4	1.0	0.4	1.3	0.7
Alphabet (A to Z)	26	3.2	5.5	4.9	6.2
Total[1]	48	9.1	1.6	8.5	5.3

In every one of the eight subtests the encouraged children gained more than the not-encouraged children although their pretest scores were about the same (encouraged children started lower on five subtests and higher on three subtests, but in none of the eight was the pretest level significantly different).

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[1] Total does not include alphabet but does include five matching items which dealt solely with letters or letter combinations.

Overall in the pre-reading area there was a significant difference in gains between encouraged and not-encouraged children on the MANOVA and MANCOVA. In the following sections, each of the subtests included in the multivariate analyses will be discussed.

(1) Recognizing Letters (4 items):

This subtest asked the child to select a letter named by the tester. For the four items, encouraged children gained more than not-encouraged children (15 percent versus one percent increased correct responses at posttest). This is a significant effect. However, the encouraged group started lower than the not-encouraged group on these four items (0.3 on the average), so although they gained more, their posttest score was only an average of 0.2 above that of the not-encouraged group. When pretest scores were covaried, the gains were not significant. In any case, the posttest level of neither group was high (about 40 percent for not-encouraged, 44 percent for encouraged), suggesting that if Sesame Street did have a effect in letter recognition, it was not a marked one.

(2) Naming Letters (8 items), assessing the child's ability to name four lower case and four upper case letters.

Gains in this area were significant both before and after covariance. The two groups began at virtually the same level, but the encouraged group gained 1.5 items in contrast to the not-encouraged group's 0.6 gain.

In the second year study, the gains in naming letters were not as great as they had been for the high viewing groups in the first year. The encouraged children's level at pretest and their gain was similar to those of Q2 children in the first year -- and the Q2 children viewed, on the average, a little less than the encouraged group viewed in the second year.

This year the best result on eight items was with upper case C:

	Pretest		Posttest	
	Not-encouraged	Encouraged	Not-encouraged	Encouraged
Percent answering correctly	14	12	25	45

On the other hand, naming upper case W, which showed great gains in the first year (Wanda the Witch commercial was popular), did not make such gains in the second year (see Table 19).

Note, however, that not only did this year's encouraged group view less than the highest viewing quartile in the first year, but there was also a curriculum change in that less time was spent on the animated commercials emphasizing naming letters. Clearly, Sesame Street in the second year had a significant impact in the naming letter category, with the qualification that its impact should not be interpreted to mean that the goal area was mastered by the children who viewed regularly.

(3) Letter Sounds and Initial Sounds (4 and 6 items):

Sesame Street seemed to have an impact in this area for our sampled children. From Table 16 we note:

Subtest	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Letter Sounds	4	0.3	0.0	0.2	0.5
Initial Sounds	6	0.7	0.3	1.0	0.4

The letter sounds test required the child to produce the sounds of letters. The difference in gains for letter sounds was significant according to the univariate tests carried out following both the multivariate analysis of variance and the multivariate analysis of covariance. This substantiates the first year evaluation in which there was also evidence that letter sounds could be taught.

The initial sounds test involved the child's naming the letter that begins words (4 items) and selecting one of four words that begins with the same sound as other words (2 items). The posttest scores for both encouraged and not-encouraged children were at about chance level. The encouraged children did gain more, and after covarying pretest score, Peabody IQ, and SES, the gain was found to be statistically significant.

Again, however, the point has to be made that although 6.7 percent of the show was spent in the sounds area, the posttest levels of the children were not high. One has to differentiate at times between statistical significance and educational significance. In the letter sounds subtest, encouraged children clearly showed statistically significant gains over not-encouraged children. At the item level for this test, four percent of the encouraged children on the average were correct at pretest and 18 percent at posttest. Not-encouraged children averaged nine percent at pretest and nine percent at posttest (no gain). Letter sounds, including initial sounds, obviously is a difficult area for 3- through 5-year-old children even after they view Sesame Street, and the question of the educational significance of these statistically significant gains has to be answered. In the process one should consider that considerable learning (early familiarization, for example) may have taken place without the criterion test assessing it. Also, as we have shown it, viewing is leading to some learning and this is superior to viewing leading to no learning. Since statistically significant results were noted, but since only a few children seem to be benefiting, further effort might be put into seeing if Sesame Street could teach the goal even more effectively. If this were to fail, then perhaps attention now paid to letter sounds might be transferred to other goals.

(4) Decoding (8 items):

In the second year 2.6 percent of the show was spent on this goal area. The child was asked to read words (3 items), associate words with a relevant picture (2 items), and classify according to rhyme (3 items). Gains on this test were quite small as may be seen in this abstract of Table 16.

Subtest	Number of Items	Not-encouraged Pretest	Gain	Encouraged Pretest	Gain
Decoding	8	1.4	-0.1	1.2	0.3

The difference in gain was not significant in the univariate tests of the MANOVA or MANCOVA. The discussion of the sounds subtests seems equally germane to the decoding area.

(5) Reading Words (9 items):

This goal area comprised 1.9 percent of the show and is differentiated from decoding in that the interest here is mainly on words that were taught on the show as sight words irrespective of decoding skills. The abstract from Table 16 shows:

Subtest	Number of Items	Not-encouraged Pretest	Gain	Encouraged Pretest	Gain
Reading	9	1.3	0.3	1.1	0.8

The observed gains were statistically significant in the univariate tests following both the MANOVA and the MANCOVA. Gains were best on the five items where words were associated with a relevant picture (e.g., bird, school bus). On the four items where words were presented on a neutral background, there were no gains and posttest scores were very low (about two percent answering correctly). As with letter sounds and decoding, we note a pattern of statistical significance with relatively small gains and low posttest levels. The show is having an effect in these new goal areas, but the suspicion is that perhaps, for disadvantaged preschoolers, there was too ambitious an extension of the curriculum in these goal areas.

(6) Left-Right Orientation (4 items):

This goal area was treated only 0.1 percent of the time and was assessed both with respect to the child's counting behavior (2 items) and his scanning of words (2 items).

An abstract from Table 16 indicates:

		Not-encouraged		Encouraged	
Subtest	Number of Items	Pretest	Gain	Pretest	Gain
Left-Right Orientation	4	1.0	0.4	1.3	0.7

The difference in gains between the two groups was significant only in the univariate test of the gains covarying pretest score, Peabody IQ, and SES. It should be pointed out that one should be wary in these circumstances in interpreting the meaning of the significant results obtained only after use of covariance.

For a useful clue on where Sesame Street was having some effect we examined the item level data. For the two items measuring left-right orientation in reading, the encouraged group gained 14.5 percentage points and the not-encouraged group gained 10.5 percentage points. For the two items measuring left-right orientation in counting, the percentage correct gains averaged 19 and 7.5 percent respectively.

Presumably, if Sesame Street were having an effect in this goal area it was mainly with respect to left-right orientation in counting rather than in reading.

(7) Alphabet:

As in the first year, about 2.4 percent of the show was spent on teaching the children to recite the alphabet. When asked to say the ABC's at pretest, the encouraged children on the average almost reached the letter "E" without error and the not-encouraged children began to falter between C and D. After the six months of the show (at posttest) the encouraged group on the average made an error after reaching K and the not-encouraged before reaching I. These differences were not significant.

g. Numbers (see Tables 16, 19, 20, 21, 26, 27)

This area was heavily stressed during both the first and second years of Sesame Street. As in the case of the pre-reading area, the second year was marked by a more ambitious program with new goals being added (e.g., addition and subtraction) and old goals extended (e.g., counting and number recognition to 20 rather than to 10). The overall percentage of time spent on numbers in the first year was 9.9 percent and in the second year it was 10.9 percent. Thus, a good deal more was covered in about the same amount of time.

An abstract of Table 16 indicates the subtests that were administered to our second year sample and the pretest levels and gains to posttest of not-encouraged and encouraged children:

Subtest	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Recognizing Numbers	4	1.2	0.1	0.9	0.8
Naming Numbers	6	0.5	0.2	0.3	1.0
Enumeration	7	2.3	1.5	2.5	1.7
Conservation	7	2.6	0.5	2.5	0.9
Counting Strategies	8	3.4	0.8	3.8	1.4
Number/Numeral Correspondence	3	1.0	0.2	1.0	0.4
Addition and Subtraction	13	0.9	0.9	1.1	1.2
Counting (1-30)	30	5.2	5.7	5.5	7.7
Numbers Total[1]	54	14.5	4.4	14.6	8.0

In every one of the eight subtests the encouraged children gained more than the not-encouraged children although their pretest scores were about the same (the encouraged children started higher on four, lower on three, and tied on one).

Overall, for the numbers area there was a statistically significant difference in gains for encouraged over not-encouraged children and this was noted both in the MANOVA and MANCOVA.

(1) Recognizing Numbers (4 items), asking the child to select a number named by the tester.

On the four items, encouraged children gained more than not-encouraged children. This difference in gains was clearly significant. It is, however, worthwhile to examine the item level data for this subtest. An abstract of Table 19 indicates:

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[1] The total does not include counting but does include number related items from the Matching Test.

Recognizing Number	Pretest Percent Correct Not-encouraged	Pretest Percent Correct Encouraged	Posttest Percent Correct Not-encouraged	Posttest Percent Correct Encouraged
8	42%	29%	40%	60%
15	27	25	32	45
16	21	20	28	40
32	25	17	27	28

The encouraged group made large gains on the number 8, and somewhat lower gains on recognizing numbers 15 and 16 (extensions from the first year goal). A transfer of learning item (numeral 32) also showed gains favoring the encouraged group, but the difference in comparison with the not-encouraged group was small. As was noted in the discussion of pre-reading, the most striking effects seemed to be occurring in less difficult areas that were part of the first year thrust. Positive but less significant effects occurred where new or extended goal areas were being assessed. Comments such as these must always be interpreted in terms of the disadvantaged group that was sampled in this New Study. We have no evidence of the effects of the show on different subpopulations of children (e.g., 6-year-old disadvantaged, 4-year-old middle class).

(2) Naming Numbers (6 items), assessing the child's ability to name one- and two-digit numbers.

About 2.3 percent of Sesame Street was spent on teaching the recognition and naming of numbers. As in the case of recognition, the encouraged children gained significantly more than the not-encouraged children on the naming numbers subtest both before and after covariance. Again, the biggest gains occurred with single digit numbers, and there was decreasing effectiveness with higher numbers. An abstract of Table 19 is revealing:

Naming Number	Pretest Percent Correct		Posttest Percent Correct	
	Not-encouraged	Encouraged	Not-encouraged	Encouraged
6	9%	10%	25%	49%
9	8	9	18	33
12	8	4	9	23
15	8	3	9	16
18	8	5	5	10
27	5	2	3	3

The average gain of the encouraged children for numbers 6 and 9 was 31.5 percent; for numbers 12, 15, and 18 it was 12 percent. For the not-encouraged children the gains were 13 percent and 0 percent respectively. Note too that posttest levels, while moderate for encouraged on single digit numbers, averaged only 16 percent for two-digit numbers (one child in six gave a correct response at posttest). There was no evidence of transfer. That is, encouraged children were not able to name number 27 (not part of the goal) any better than not-encouraged children.

It is clear that Sesame Street can teach children to recognize and name numbers. In the first year of the show this was shown to be true, and the results were replicated in the second year. What seems arguable is the wisdom of extending the goal beyond the number ten with disadvantaged preschoolers. Is it better to concentrate on numbers one through ten and achieve a high degree of competence for these children on this basic skill; or is it better to increase the scope of the goal, thereby providing more challenge to better prepared preschoolers and to slightly older children?

(3) Enumeration[1] (7 items):

About 2.1 percent of the show was spent on this goal area which was assessed by asking the child to count groups of objects (5 items) or point to the picture with a certain number of objects (2 items). An abstract from Table 16 indicates:

Subtest	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Enumeration	7	2.3	1.5	2.5	1.7

The encouraged group gained more, but not significantly more -- the difference in gain of 0.2 was probably a chance effect. The items where enumeration did seem to be affected by the show were those where the child was asked to count a small number of objects (e.g., three or four). When groups of nine and 15 were presented (the latter being beyond the stated goal), encouraged children did no better than not-encouraged children.

(4) Conservation (7 items):

This new goal area was given little time on the show (0.5 percent), and was measured by asking the child to select the picture with the same number of objects as a different configuration of that number of objects. No significant effects were observed, although the encouraged children did show slightly higher gains.

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[1] Part of this subtest, the Counting Strategies subtest, and the Conservation subtest are adapted from the ETS Enumeration Test. Our great appreciation is extended to Dr. Masako Tanaka.

(5) Counting Strategies (8 items):

This was a new goal, and it, too, received relatively little time on the show (0.5 percent). The test measured the child's ability to point to each object once when counting and to count groups in reasonable order. The pretest level was slightly higher for the encouraged group than for the not-encouraged (3.8 items correct on the average vs. 3.4). The average gain was slightly higher for the encouraged group (1.4 vs. 0.8). This gain was not significant according to the MANOVA ($p = .09$); but it was seen as significant when pretest score, Peabody IQ, and SES were covaried. Since this was due to about 40 minutes instruction spread over six months, and since most of the encouraged children did not view every program, the indication is that counting strategies could be made into an effective area for children if given more attention on the show.

(6) Number/Numeral Correspondence (3 items):

This new goal area was directly presented only 0.2 percent of the time. However, the goal area was actually a combination of two other goals, recognition and enumeration. The test required the child to select the numeral that represented the number of objects pictured. The two groups were even at pretest. Differences in gains to posttest were not significant on the univariate tests following the MANOVA but they were significant on the univariate tests following the MANCOVA. Consider the item statistics:

Item	Pretest Percent Correct		Posttest Percent Correct	
	Not-encouraged	Encouraged	Not-encouraged	Encouraged
2 frogs	45%	43%	57%	66%
5 turtles	27	33	35	43
8 spiders	24	21	27	31

The third item seems to have been too difficult (25 percent being a chance level score). The first two items do suggest some impact, and the figures at least suggest the potential of the show in achieving this goal.

(7) Addition and Subtraction (13 items):

About 1.1 percent of the show was devoted to teaching in this area. The child was asked to add or subtract objects presented pictorially (4 items) or verbally (6 items) and to label arithmetic signs (3 items). The encouraged children started somewhat higher and gained more, and although this gain was not significant in the univariate test following the MANOVA, it was when pretest score, Peabody IQ, and SES were covaried. However, examination of the item level data reveals that most of the differential gain occurred in one item in which the child was tested to see if he knew that an object cut in half would then have two components. There was no evidence of transfer or indirect learning of the names or meanings of arithmetic signs such as + and =.

(8) Counting from 1 to 30:

About 2.6 percent of the show was spent on counting from response by 69 percent of the not-encouraged and 68 percent of the encouraged. Obviously, no significant differences can be seen between the two groups.

A possible reason for the large gains by both groups is that at pretest, most of the children could not count to eight and were, therefore, unable to respond to the item even when they knew how to count from one number to the next. However, at posttest the majority of both groups had learned to count to eight, and, therefore, could correctly respond. These results suggest that once children are able to count, most are also able to count within a defined area, and possibly the time spent on Sesame Street teaching in this goal area might be more wisely spent in other ways.

h. Relational Terms (see Tables 16, 19, 20, 21)

The show spent 4.8 percent of the time on teaching in this goal area. This was about the same as was spent in the first year. The goal area was assessed by asking the child to select the picture in which a specified relationship was depicted. The children in the New Study began at slightly lower levels than in the first year and the encouraged group made significant gains:

Test	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Relational Terms	17	9.0	1.2	8.5	3.0

Analysis of the item level data reveals that the show seemed effective across most relational terms. The greatest gains were noted in terms dealing with quantity:

Term	Not-encouraged	Encouraged
more	13%	23%
most	9	17
less	2	24

Relational terms dealing with postition also showed effective gains with few exceptions:

Term	Not-encouraged	Encouraged
first	17%	18%
last	5	20
farthest	18	26
nearest	20	21
between	9	11
around	0	21
on	4	4

There were two items that tested the child's knowledge of weight. This was not an explicit goal of the show, but gains favored encouraged children, an indication of transfer of learning.

Term	Not-encouraged	Encouraged
heaviest	2%	9%
lightest	-6	19

Relational terms is an area where the sampled children seemed to have gaps in their knowledge and where Sesame Street served to decrease those gaps.

i. Classification (see Tables 16, 19, 20, 21, 28, 29)

There was a marked increase in the percentage of time spent on this goal area in the second year of Sesame Street (from 0.7 percent in the first year to 2.6 percent in the second year). The goal area was extended to include double classification (0.5 percent of the show) and property indentification (0.4 percent) leaving 1.7 percent for single criterion classification. The test included 10 items in which the child chose a picture that went with three others, 5 items in which the child was asked to explain the choice (single criterion), and 9 items where the correct classification depended on cognitively processing two properties (double classification).

An abstract of Table 16 indicates:

Subtest	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Classification	15	4.2	0.2	3.9	1.6
Double Classification	9	2.6	0.1	2.1	0.7
Classification Total	24	6.8	0.3	6.0	2.3

The gains of the encouraged children were significantly greater than the not-encouraged gains on the total score for classification and for the classification (single criterion) subtest. In this single classification subtest there were item level gains favoring the encouraged children for classification by class, by size, by number, and by emotion. Gains by the not-encouraged children were about two percent while gains for the encouraged children were about 13 percent. Even though verbal skills are an area of deficiency in disadvantaged children, the difference was even greater for the four items where the child was asked to verbalize a reason for his choice. It should also be noted that although Sesame Street had a positive and significant effect in the classification subtest, percentage correct at posttest was not high -- on only two items did the encouraged group reach 70 percent or higher.

The new subgoal of double classification proved to be a more difficult area. Gains were not large for the encouraged children, but there was almost no gain for the not-encouraged children. This suggests that the children in this sample were not maturationally ready for this task. The fact that the unadjusted gain of the encouraged children was significantly greater than the not-encouraged children is not particularly impressive. The children's performance was at about chance level, and the encouraged children had lower pretest scores than the not-encouraged children. Perhaps they became luckier at posttest! After pretest scores were covaried, the gain differential was no longer significant. It would seem more profitable, on the basis of these results, to concentrate on single criterion classification as the main thrust of the classification goal area.

j. Sorting (see Tables 16, 19, 20, 21)

This goal area comprised about 1.2 percent of the show, down from 1.9 percent in the first year. On the test the child was asked to select one object that did not belong with three others (11 items) and to explain that choice (5 items). Children at pretest performed at about chance level. The not-encouraged children did slightly worse at posttest than at pretest. The encouraged children, on the other hand, made significant gains. On the average, 14 percent more children answered each item correctly at posttest than at pretest. An abstract from Table 16 follows:

Test	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Sorting	16	4.6	-0.2	3.7	2.1

As in the case of classification, the larger gains of the encouraged children included items where verbal explanations were called for. The differential gains occurred in items testing sorting by size, shape, number, letters, and class. However, the encouraged children averaged just over 50 percent on sorting items not requiring verbalization, indicating that while the gains were significant there was still much room for improvement.

k. Parts of the Whole (see Tables 16, 19, 20, 21)

This was a newly emphasized goal in the second year, and 1.2 percent of the show was spent on teaching it. It is apparent from the descriptive level data that no significant effects were achieved in this area. From Table 16:

Test	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Parts of Whole	10	3.8	0.8	3.9	0.9

At the item level, the average gain in percentage correct from pretest to posttest was 7.4 for the not-encouraged and 8.8 for the encouraged. The show did not teach the goal according to our manner of assessment in which the child was asked to select the object that could be made from a set of parts. On the show there was emphasis on interchanging parts of two entities (e.g., mouse and elephant) and on looking at magnified parts of a whole (e.g. tire film and tomato film). Perhaps it would be worthwhile experimenting with new techniques to teach the goal, or, of course, we might experiment with new techniques to measure performance. In any case, learning, as measured, was not affected by the show. The children's scores indicate that there is room for growth in this area, and that the sampled children have begun to understand the concept of parts of a whole as indicated by the very high percentage correctly answering the easiest item.

1. Emotions (see Tables 16, 19, 22, 23)

This was a newly tested goal area in the second year. About 3.5 percent of the show was spent teaching this area. The test assessed the child's ability to select the appropriate emotions (happy or sad) for specific situations. There were eight items and a chance score was four. The encouraged children did out-gain the not-encouraged, but the difference was not significant. From Table 16:

Test	Number of Items	Not-encouraged Pretest	Not-encouraged Gain	Encouraged Pretest	Encouraged Gain
Emotions	8	3.8	1.1	4.1	1.5

The children seemed better able to recognize happy than sad events, but the surprise was that so many remained confused even at posttest. The show presented a number of emotions -- surprise, anger, fear, love, happiness, and sadness. Thus, this test assessed only a small sample of possible emotions that might have been measured. This admittedly incomplete assessment indicates the need to continue experimenting in this area and suggests that one should not assume that disadvantaged preschoolers can recognize common emotions.

m. Attitudes to School, to Others, and to Race of Others (see Tables 16, 19)

The attitude assessments were dependent upon a child being able to differentiate between happy and sad — after all, attitudes have an evaluative element, and a reasonable way of assessing preschooler attitudes is to find if a child has a happy or sad connotation associated with a situation or event. (Appendix D provides a description of this test.) For example, it is presumed that if a child associates happiness with reading, going to school, and talking to the teacher, he has positive attitudes to them. However, if a child cannot associate happiness or sadness in situations that may clearly be expected to evoke those emotions (e.g., when hurt, when eating an ice cream) then it is not sensible to administer the attitude measures. Therefore, the attitude measures were administered only to those children who were successful on six out of the eight items on the Emotions Test. These children had thereby demonstrated that they had the necessary understanding and that their responses to the attitude items could be properly interpreted.

Unfortunately, with this criterion that children first be able to demonstrate their ability to recognize happy and sad in appropriate situations, only 78 children at pretest (37 not-encouraged, 41 encouraged) and 156 children at posttest (77 not-encouraged, 79 encouraged) were eligible for attitude assessment.

There was little point in carrying out analyses of the gain scores from pretest to posttest, there being only 26 not-encouraged and 29 encouraged children for whom both pretests and posttests were available. If one examines the percentage choosing "happy" on the nineteen attitude items, the scores per item at posttest tended to favor the responding encouraged children (13 more positive, five less positive, one tied) over the responding not-encouraged children. Since children could choose "happy," "sad" or "don't know," the percentage choosing "sad" was not the complement (summing to 100) of the percentage choosing happy. The not-encouraged children chose sad more frequently than the encouraged children in 16 of the 19 items, a significantly higher proportion as assessed by the Sign Test.[1] It would be unwise to suggest, on this basis alone, that Sesame Street had the effect of creating positive attitudes to school, to others, or to race of others. But further investigation certainly seems warranted. Section D below details results of the Follow-up Study and some further light is shed on this area.

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[1] Siegel, Nonparametric Statistics. New York: McGraw-Hill, 1956, pp. 68-75.

n. Peabody Picture Vocabulary Test (PPVT)

In the first year the PPVT was given so we would be able to describe the children in our sample. It is a standardized test that is easy to administer, and it has been used in many studies of children from preschool through elementary school. Therefore, it allowed comparisons of the results obtained on the children in the Sesame Street studies with results obtained on children sampled in other kinds of studies. In the first year, the test was administered at pretest only, and it was used as both a descriptive variable and as a moderator variable. In the latter regard, we were able to inquire if children at various levels on the Peabody had learned from Sesame Street.

A number of teachers and school psychologists wrote to us after the first year report was published, offering the opinion that Sesame Street was affecting the "brightness" of the children who were entering their schools.[1] Because in the second year we were again administering the Peabody Test at pretest, we thought it might be useful to readminister it at posttest. The PPVT assesses a child's receptive oral vocabulary. It has been normed so that a mental age and a deviation IQ can be estimated from the raw score. Obviously the test is not a direct assessment of "intelligence" — no test is. But it has been used as an indicator of mental age and IQ, and it does correlate moderately with other tests that purport to assess intelligence or school aptitude. It also correlates moderately with performance in academic subjects in school.[1]

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[1] We wish to thank especially, Ms. Lillian Stillwell, School Psychologist in Auburn, California, for her useful observations and offers of cooperation.

The Peabody IQ scores of the children as measured at pretest and at posttest were:

	Not-encouraged	Encouraged
Pretest IQ	74.4	72.1
Posttest IQ	70.6	73.8
Gain	-3.7	+1.7

The difference in gain of 5.4 points was found to be statistically significant Note that it is not unusual for disadvantaged at-home children to drop in IQ over a six month period, nor is it surprising that an educational program could have the effect of reversing this tendency. There is further evidence, to be presented in the Follow-up Study (below), which substantiates this result.

With all the recent controversy about IQ, it becomes an even more than usually difficult task to discuss this significant gain. First, one should again warn that Peabody score based on size of the child's receptive oral vocabulary is not the same as "intelligence"; but it does seem that on at least one conventional test of IQ, Sesame Street had a positive effect. One might wonder why — the show does not attempt to teach vocabulary directly. But listening to a show which does not talk down to children and which broadens a child's experience with words might conceivably have effects in this area.

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[1] The PPVT Expanded Manual (1965) discusses three forms of validity of the PPVT. "Congruent" validity compares PPVT scores with those of other vocabulary and intelligence tests. The results presented from more than 20 studies vary over a wide range but for the WAIS and Stanford Binet, correlations generally in the 50s and 60s are found. "Concurrent" validity is defined as the extent to which PPVT scores correlate positively with measures of academic achievement. The median correlations are in the 50s. Binet and Wechsler have slightly higher correlations with achievement scores and "this could be anticipated since the PPVT provides a smaller and narrower sampling of intellectual behavior." However the differences are not great. "Predictive" validity examines the correlation of PPVT with scores from achievement tests given at a date later than the PPVT was administered. In the one relevant study cited, PPVT at the beginning of first grade correlated with achievement test scores at the end of the year 0.39 (word knowledge), 0.35 (word discrimination), and 0.39 (reading).

o. Parent Questionnaire (see Tables 17 and 18)

The Parent Questionnaires given at pretest and at posttest were designed not only to obtain background information on the children and data on their viewing behavior. They were also designed to assess whether the show had side-effects and whether there were changes in parental attitudes and behaviors associated with child learning.

There were few changes in responses from the pretest to the posttest Parent Questionnaire. Possible side-effects of Sesame Street did not seem to occur in these areas -- for example, parents' expectations for their children, reading to the children, the use of art materials in the home, and opinions on how children learn did not seem to be affected.

We did note among viewing children that encouraged children's mothers watched Sesame Street with their children more than not-encouraged children's mothers. Adapted from Table 18:

		Percent of viewing children's mothers	
		Not-encouraged	Encouraged
Mother watched *Sesame Street* with child	Almost always, usually or sometimes	60%	76%
	Hardly ever	40	24

Thus, encouragement not only had the effect of getting more children to view more frequently and to view more of each show, but it also meant that mothers were more likely to view with their children. The difference was clear, but there was considerable overlap, with many not-encouraged mothers viewing with their children and some encouraged mothers hardly ever doing so.

p. *Results in summary*:

We have looked at 29 goals of *Sesame Street* and three side areas of interest (attitudes, Peabody Picture Vocabulary Test, and Parent Questionnaire indices). *Sesame Street* seemed to have strong positive effects in some areas, equivocal but possibly positive effects in others, and no apparent effects with still others. In no area did we note negative effects. The following summary of the preceding presentation of results is offered so the reader may take an overall view. Here is a list of areas discussed in the New Study where gains for the encouraged in comparison to the not-encouraged

1. *were clearly and significantly greater* -- function of body parts, naming geometric forms, roles of community members, matching by form, naming letters, letter sounds, sight reading, recognizing numbers, naming numbers, counting,

relational terms, classification (single criterion), and sorting;

2. seemed to be greater but the evidence was not as strong or the degree of difference did not seem as educationally important -- naming body parts, recognizing letters, initial sounds, decoding, left-right orientation, counting strategies, number/numeral correspondence, addition and subtraction, double classification, emotions;
3. did not seem to be greater -- recognizing geometric forms, matching by position, alphabet recitation, enumeration, conservation, parts of the whole.

In reaching these judgments, the results of the MANOVA's and MANCOVA's and the univariate tests based upon them were mainly relied upon, with some additional weighting being given to such considerations as level at posttest and size of the gain by the encouraged (as distinct from relative size of the gain in comparison with the not-encouraged).

It can be seen that of 29 areas tested, 13 showed clearly the effects of Sesame Street, 10 seemed to indicate some effects though the gains were not as clear and the interpretation less positive, and six did not show the effects of Sesame Street.

Of the three areas where possible side-effects were studied, the home background indices showed no statistically significant effects, the attitudinal assessment was inconclusive due to difficulties of measurement, and the PPVT results indicated a significant effect. The second year of the show, though based on the first year, remained experimental in that

2. Results of All Children by Viewing Groups

In preceding sections of this report, the experimental manipulation of encouragement has been described and the effects of this manipulation on the children's amount of viewing have been presented. It has been noted that since the encouraged (experimental) group contained a few non-viewers and the not-encouraged (control) group contained some viewers, the results of the experiment were conservative estimates of the effects of viewing Sesame Street.

In this section, the data obtained in the New Study will be presented in terms of reanalyses made on the basis of amount of viewing,[1] with the not-encouraged versus encouraged factor eliminated from consideration. In the following section both amount of viewing and the encouragement factor will be considered together.

The danger of this type of analysis of the data is that amount of viewing was a matter of self-selection by the viewer. Thus, effects noted in the results could be due to the differences in amount of viewing or to some other, perhaps subtle factor that influenced both amount of viewing and achievement. Granted this danger, it is nonetheless useful to be able to describe the kinds of children who were differentially attracted to viewing and to describe the gains they made.

There were 283 children in the New Study of whom 108 were non-viewers (NV). The 175 viewers were divided into two groups -- 89 less frequent viewers (H_1) who watched two or three times a week and about half an hour of each show they viewed; and 86 frequent viewers (H_2) who watched Sesame Street about four times a week and almost all of each hour they viewed.

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[1] A full description of the viewing groups and how they were developed can be found in Chapter II C4.

A comparison of the NV, H_1, and H_2 groups will be carried out using the following tables:

-- Table 30 which presents pretest and gain scores on total tests and subtests for all New Study children by viewing groups NV, H_1, and H_2.

-- Table 31 which presents the Parent Questionnaire scales for all New Study children by viewing groups NV, H_1, and H_2.

-- Table 32 which presents responses to selected Parent Questionnaire items for all New Study children by viewing groups NV, H_1, and H_2.

The children in the three groups came from our two sites in about the same proportion:

Site	NV	H_1	H_2
Winston Salem	30%	22%	24%
Los Angeles	70	78	76

The proportion of girls who were in the viewing groups (H_1 and H_2) was somewhat greater than the proportion of boys, but the difference was not statistically significant.

Sex	NV	H_1	H_2
Girls	52%	55%	58%
Boys	48	45	42

As might be expected from previous reporting of the results, encouragement strongly affected amount of viewing.

	NV	H_1	H_2
Encouraged	8%	48%	91%
Not-encouraged	92	52	9

The Parent Questionnaire scales did not show significant differences among the three groups at pretest except with respect to school expectation where H_1 was lowest.

Thus, as an example drawn from these specifics alone, it can be seen that if H_2 viewers learned more than H_1 viewers or NV children, it could be due to more viewing, a greater proportion of girls, the encouragement factor, or some combination of these.

The results indicate that gains increased with amount of viewing.

	NV	H_1	H_2
Mean Gain on Grand Total	9.0	23.7	32.3

From a study of the descriptive data, the gains seemed to be most strongly associated with amount of viewing in the following general areas:

- Geometric Forms
- Roles of Community Members
- Matching by Form
- Pre-reading
- Numbers
- Relational Terms
- Classification
- Sorting
- Grand Total
- Peabody

The results in the area of Peabody IQ are consonant with those reported above in the not-encouraged versus encouraged analysis, and below in the Follow-up Study, namely that viewing was associated with gains:

	NV	H_1	H_2
Peabody IQ Pretest	75.0	71.9	72.6
Peabody IQ Posttest	70.3	72.0	74.4
Peabody IQ Gain	-4.7	+0.1	+1.8

In general then, the differences between the three viewing groups accentuate slightly the estimates of the effects of the show noted in the not-encouraged versus encouraged study. The slight increase in the size of the effects might be due to a "purer" comparison in terms of the amount of viewing; but this increase is bought at the price of poorer interpretability. In the not-encouraged/encouraged breakdown, differences could be attributed to Sesame Street, whereas in this analysis, initial confoundings at pretest through self-selection processes prevent such a clear attribution.

3. Results of All Not-encouraged and Encouraged Children by Viewing Groups

In the two preceding sections, the data have been analyzed in terms of encouraged versus not-encouraged children and in terms of amount of viewing. The technically superior analysis was in terms of encouragement for this constituted a "true" experiment whereas the amount of viewing analysis had problems of interpretation due to self selection of subjects (each child "deciding" how much to view).

There is an advantage, however, in carrying out a third analysis that brings together both encouragement and amount of viewing. The following presentation will describe the differences that emerge when the six groups (not-encouraged vs. encouraged within NV, H_1, and H_2 groups) are compared. In order to follow in detail the discussion, these tables should be consulted:

-- Tables 33a and 33b which present pretest and gain scores for the not-encouraged and encouraged children by viewing groups NV, H_1, and H_2.

-- Tables 34a and 34b which present Parent Questionnaire scale scores for the not-encouraged and encouraged children by viewing groups NV, H_1, and H_2.

First it should be noted that the distribution of children among the six categories (not-encouraged versus encouraged by non-viewers (NV), infrequent viewers (H_1), and frequent viewers (H_2) is uneven.

	NV	H_1	H_2	Total
Not-encouraged	99	46	8	153
Encouraged	9	43	78	130
Total	108	89	86	283

This abstract shows that although the experimental manipulation worked, it was not completely successful.

We have noted in previous sections that encouraged children gained more than not-encouraged children. We have also noted that H_2 children gained more than H_1 children who gained more than NV children; but encouragement was confounded in this analysis with a higher proportion of encouraged in H_2 and a lower proportion in NV. Thus:

	NV		H_1		H_2	
	Pretest	Gain	Pretest	Gain	Pretest	Gain
Not-encouraged	74.4	7.8	64.0	19.8	83.1	13.9
Encouraged	56.9	22.0	63.6	27.8	70.6	34.2

[Note: small N's for encouraged NV (N=9) and not-encouraged H_2 (N=8)]

We also see that both the experimental (encouraged) and the control (not-encouraged) groups self selected the amount they viewed, and the encouraged non-viewers had low pretest attainments, and the not-encouraged H_2 viewers had high pretest attainments.

The important question for this section of the analysis is not so much the documentation of this self selection as it is the extraction of encouragement effect and viewing effect. In order to do this a univariate analysis of covariance technique was applied to examine the effects of encouragement and viewing on the total gain score.

Since some not-encouraged viewed and some encouraged did not view, it was possible with this technique to extricate the effects both of encouragement and viewing. The following analysis provides the necessary information:

Univariate Analysis of Covariance:

	df	mean square	F ratio	P
Error	174	732.43		
Encouragement	1	7640.10	11.13	.001
Viewing	1	3114.87	5.54	.03
Error	172	686.66		
Encouragement x Viewing	1	1613.66	2.37	.13
Error	171	680.93		

The encouragement by viewing interaction effect was not significant. This indicates that the regression of viewing on total gain was similar for the encouraged and not-encouraged groups. That is, the encouraged and not-encouraged groups had parallel regression lines and further statistical testing was proper. Next we note that viewing was significant which indicates that the regression of total gain on viewing was significantly different from zero. Finally we note that the test of the encouragement effect was also significant. This indicates that there was a significant difference between the intercept of the encouraged group's regression line of total gain score on viewing and the intercept for the not-encouraged group. In short, viewing operated to affect gain scores in the encouraged group much as it did in the not-encouraged group. Viewing was a significant factor affecting gains, irrespective of encouragement, but so too was encouragement a significant factor affecting gains irrespective of viewing.

A number of important implications can be drawn from this result, and they will be presented and discussed in Chapter IV.

4. Results of All New Study Children Grouped by Age

In the evaluation of the first year of Sesame Street, we noted some variations in gains associated with the age of the child. For example, 3-year-olds seemed to make much larger gains than 4- or 5-year-olds in some letters and numbers subtests. Unfortunately, a large proportion of the sampled children in the first year was 4-years-old, and the multivariate analyses did not include age as an independent variable.

It was decided in the New Study to investigate at-home disadvantaged children aged three through five in the proportions that they became available through our sampling procedure. It was also decided to enter age as an independent variable in the multivariate analyses.

The definitions of the age groups in the New Study were the same as those used in the first year evaluation:

3-year-olds were 43 months or younger at pretest

4-year-olds were 44 to 55 months at pretest

5-year-olds were 56 months or older at pretest

At the start of the show the mean ages in months for the 3-, 4-, and 5-year-old children sampled in the New Study by their encouragement status were:

Age Group	Not-encouraged	Encouraged
3	39.1	38.5
4	48.4	49.2
5	61.5	61.7

The 3-year-olds were on the average about 3-1/2 by the middle of the Sesame Street series, the 4-year-olds were about 4-1/4 at that time, and the 5-year-olds were 5-1/3. In our final sample (the group for whom pretest and posttest scores were available) there were:

95	3-year-olds
101	4-year-olds
87	5-year-olds

The results for the children in the New Study grouped by age can be seen by examining the following tables and figures:

-- (already presented) Tables 20, 22, 24, 26, and 28 which present the multivariate analyses of variance (MANOVA) for the gains on the dependent variables (total and subtest total gains) and where encouragement (encouraged-not encouraged), sex (male-female), and age (3-, 4-, and 5-year-olds) are independent variables.

-- (already presented) Tables 21, 23, 25, 27, and 29 which present the multivariate analyses of covariance (MANOVA) for the same dependent and independent variables and where pretest scores, pretest Peabody IQ, and socioeconomic status (SES) are the covariates.

-- Tables 35a, 35b, and 35c which present the pretest scores and gains separately for 3-, 4-, and 5-year-old not-encouraged and encouraged children.

-- Tables 36a, 36b, and 36c which present Parent Questionnaire scales separately for 3-, 4-, and 5-year-old not-encouraged and encouraged children.

-- Tables 37a, 37b, and 37c which present selected Parent Questionnaire items separately for 3-, 4-, and 5-year-old not-encouraged and encouraged children.

-- Figures 5a, 5b, and 5c which present graphically the percentage of items answered correctly at pretest and posttest separately for 3-, 4-, and 5-year-old not-encouraged and encouraged children.

The children in the three age groups seem, in general, to be drawn from the same population of disadvantaged at-home children. The possible qualification is that since there is more opportunity for older children to enroll in preschool programs and since these programs usually attract superior elements from the available pool of children, one might expect the at-home 3-year-olds to represent a slightly broader and slightly more able spectrum than the at-home 4- and 5-year-olds. The figures provide some support for this supposition. Abstracting from relevant tables we note:

	Peabody IQ at pretest		Mean years of parent education	
Age	Not-encouraged	Encouraged	Not-encouraged	Encouraged
3	75.5	71.1	11.5	11.2
4	73.2	73.4	11.0	10.8
5	74.5	71.6	10.8	10.5

Differences in Peabody scores over the age groups were small and did not seem to be systematic; but the SES index favored the youngest age group. Other indices from the Parent Questionnaire scales seem to indicate that the three age groups were quite similar in home background.

The three age groups viewed the show to about the same degree. In terms of the three viewing groups we note:

Age	Non-viewers	H_1 (less frequent)	H_2 (more frequent)	
3	35%	39%	26%	= 100%
4	41	30	30	= 100%
5	39	25	36	= 100%

Given then that the three age groups seem approximately similar in Peabody IQ, home background, and amount of viewing, though granting that the 3-year-olds had a slight advantage by SES, we turn now to the results of the testing.

Inspection of the means for total score at pretest and the gains to posttest for each of the three age groups shows:

	Pretest		Gain	
Age	Not-encouraged	Encouraged	Not-encouraged	Encouraged
3	58.3	50.4	13.2	37.2
4	68.2	68.2	9.5	29.0
5	92.5	82.9	12.9	27.7

There were observed differences favoring the 3-year-olds over 4- and 5-year-olds. However, there were no significant interactions between age and encouragement in any of the MANOVA's or MANCOVA's. That is, according to the statistical tests, encouraged children did not gain disproportionately more than not-encouraged children at one age level compared to another age level. One could argue, on this basis, that the show did not benefit one of the three age groups over the other two.

While there were no significant interactions between age and encouragement, there were some main effects due to age. That is, collapsing the scores of not-encouraged and encouraged children into one pool and then looking at the simple gain scores for each of the three age groups, significant differences emerged on a few tests. This occurred in the pre-reading run of the MANOVA. Subsequent univariate tests indicated that the subtests where the age effects were pronounced were naming letters and alphabet recitation.

Both favored 5-year-olds.

In the MANCOVA's each of the runs indicated significant main effects for age. That is, after covarying pretest score, pretest Peabody IQ, and SES, children at the 5-year-old age level consistently performed better on the adjusted gain score than those at the other age levels irrespective of encouragement. Considerable care needs to be taken in interpreting this result. It does not mean that in fact the 5-year-olds gained more (the contrary was usually true). The result is mainly dependent upon the negative correlation that occurred between pretest score and gain scores; the covariance of pretest score enables the question to be answered: What if the correlation had been zero? In this instance that is not a proper question to ask because the three age groups were quite different in pretest status and there was a sizeable negative correlation between pretest status and gain. The adjusted mean gain score is uninterpretable in this situation.

The main point to be noted, however, is that there were no significant interactions between age and encouragement, indicating that the show benefited each of the age groups to a similar degree.

-- Table 38 which presents the pretest scores and gains for not-encouraged and encouraged children separately for girls and for boys.

-- Tables 39a and 39b which present Parent Questionnaire scales for not-encouraged and encouraged children separately for girls and for boys.

-- Tables 40a and 40b which present selected Parent Questionnaire items for not-encouraged and encouraged children separately for girls and for boys.

-- Figures 6a and 6b which present graphically the percentage of items answered correctly by the not-encouraged and encouraged children at pretest and posttest for total scores separately for girls and for boys.

The girls at pretest began at a slightly higher level than the boys:

Pretest Total

	Not-encouraged	Encouraged
Girls	73.9	68.5
Boys	69.2	65.8

This is at least partly explained by the fact that the girls were on the average somewhat older:

Mean Age in Months

	Not-encouraged	Encouraged
Girls	49.2	50.4
Boys	48.6	49.3

Further, the girls were slightly superior in terms of Peabody mental age -- though note the closeness of the not-encouraged versus encouraged comparison within the sexes:

Mean Peabody Mental Age in Months

	Not-encouraged	Encouraged
Girls	36.6	36.4
Boys	35.1	35.2

A comparison of girls and boys, as described by the responses on the Parent Questionnaire scales and items, fails to produce significant differences. However, girls viewed slightly more than boys though the differences were not statistically significant.

	Non-viewers (NV)	Infrequent Viewers (H_1)	Frequent Viewers (H_2)
Girls	36%	32%	32%
Boys	41	31	28

In short, girls at pretest had slightly higher attainments than boys, were slightly older, and had slightly higher Peabody mental ages. They also watched Sesame Street a little more. None of these differences was great. Similarly slight were the differences in gains on the grand total between girls and boys:

	Not-encouraged		Encouraged	
	Pretest	Gain	Pretest	Gain
Girls	73.9	11.1	68.5	32.3
Boys	69.2	12.5	65.8	29.8

No statistically significant main effects or interactions involving sex were found in any of the MANOVA's or MANCOVA's except for one triple interaction (encouragement by sex by age) in classification. The source of this effect was found in double classification only; we are unable to interpret this effect. It seems reasonable to conclude that girls and boys were similarly benefited by Sesame Street.

Comparison with the First Year

One of the questions that is bound to arise is whether Sesame Street was as successful in its second year of telecasting as it was in its first year. We have already shown that the goals of Sesame Street were revised for the second year, usually in the direction of extending and deepening the goal areas. We have also seen that the percentage of time spent on different techniques used to treat the goals changed. Therefore, there is an obvious criterion problem because there are, in effect, two different, though overlapping, products to be compared.

A second problem arises when the question is asked, "Successful for whom?" In the second year, in order to estimate the show's effects as clearly as possible, we deliberately sought children who had not viewed during the first year. This eliminated from consideration those children who, for whatever reason, did view in the first year; and one could infer that this would mean the second year sample might be somewhat lower in attainments than the first year sample who were not so skimmed. Certainly in Los Angeles this appears to have been a factor, and the children sampled there seem like our non-viewers in the first year study. In Winston-Salem prior viewing was not a factor in that the show simply was not available there in the first year. However, our sampling from non-cable areas in Winston-Salem in the second year meant that only the lower sections of lower class children were available (the less impoverished having already had cable installed).

Indeed, it was the case that our second year sample at pretest was lower in pretest scores than our first year at-home sample. The at-home children in the first year were about seven months higher in mental age and eight points higher in IQ (as defined by the Peabody Picture Vocabulary Test). On one of the two subtests that remained unchanged over the two years (recognition of geometric forms), the first year at-home sample had a pretest mean of 2.0 and the second year sample had a pretest mean of 1.7.

Thus, for our one point of comparison between the first and second year samples (the at-home disadvantaged children), it appears that the second year group was more disadvantaged. What can be said is that the first year of Sesame Street was successful in many goal areas for the children studied and that the second year of Sesame Street was successful in many goal areas for the children studied.

C. Analyses of Spanish-background Children

A group of Spanish-background children in Los Angeles was included in the evaluation in order to study the effects of Sesame Street on these minority children. The children in this group were sampled in much the same way as were the children in the New Study. However, the coordinator in Los Angeles employed people from El Monte who were proficient in both English and Spanish. All tests and questionnaires used in this study were translated into Spanish. The policy was to test the child in the language in which he seemed more proficient. The actual decision about whether to test a child in English, Spanish, or in a combination of both languages was left up to the individual tester. Both English and Spanish versions of the Parent Questionnaire were given to the mothers who were asked to complete the one with which they felt most comfortable.

The tests of the Spanish-background children differed from the tests of the New Study sample in one way. In addition to the Peabody Picture Vocabulary Test, each child was also posttested with a Spanish translation of a different form of the PPVT. Both the English and Spanish versions of the PPVT can be interpreted only as a gross measure of the amount of English and Spanish vocabulary known by the children. Neither test can be used as a estimate of IQ or mental age since some children spoke only Spanish, some only English, and some spoke both. Therefore, only the raw scores for these two PPVT tests are reported.

A total of 85 Spanish-background children were pretested and 66 of them were posttested. It had been hoped that this sample of children would be larger so that more definitive answers about the effects of Sesame Street on Spanish-background children could be made. However, as in our first year evaluation, difficulties were encountered in obtaining the continued cooperation of families.

About half of the initial sample of 85 children was encouraged to view and the other half was not encouraged. Although none of the children had watched Sesame Street during the first year, all but eight of the 66 children viewed the show during the second year. No clear evidence exists on why the experimental manipulation (encouragement vs. not-encouragement) broke down with the Spanish group but not with the other groups in our New Study. Perhaps there was extra communication within the Spanish community so that encouraged children's parents influenced the not-encouraged to view. Or perhaps the CTW field staff in the Los Angeles area did an especially effective job in publicizing Sesame Street among the Spanish population. For whatever reason, the manipulation did break down, most children viewed the show, and the problem of interpretation beset us as it had in the first year. Analyses based on the original encouraged/not-encouraged design would not be useful, and all results for the Spanish-background children are presented by viewing groups.

The following tables contain descriptive data on the Spanish-background children:

-- Table 41 presents pretest scores and gains for the non-viewing (NV), infrequent viewing (H_1), and frequent viewing (H_2) Spanish-background children.

-- Table 42 presents Parent Questionnaire scale scores for the NV, H_1, and H_2 Spanish-background children.

-- Table 43 presents Parent Questionnaire item responses for the

NV, H_1, and H_2 Spanish-background children.

The self-selection of the children into non-viewers, infrequent viewers, and frequent viewers presents a problem in interpreting the results. The children who viewed most often were an older, more advantaged group than the infrequent viewers and the non-viewers, as the following selected scores indicate:

	NV	H_1	H_2
	(N=8)	(N=29)	(N=29)
Pretest Total	60.9	65.2	81.1
Chronological Age	44.6	44.9	47.6
PPVT English (pretest)	17.0	18.1	28.8
PPVT Spanish (posttest)	3.5	10.9	18.9

The Parent Questionnaire scale scores, including mean years of parents' education, show no statistically significant differences among the three groups, although the H_2 group scored at or higher than the other groups on every scale.

The analysis of variance run on the grand total gain of non-viewers and viewers showed no significant differences ($p=.34$). The descriptive data substantiate this, bearing in mind the standard deviations of the mean gains of 30.7, 35.3, and 20.8 respectively.

	NV		H_1		H_2	
	Pretest	Gain	Pretest	Gain	Pretest	Gain
Total Scores	60.9	11.0	65.2	23.8	81.1	19.4

Although the non-viewers gained least, their pretest scores were lowest. The greatest gains were made by the H_1 (infrequent viewing) group. Thus, the difference between the gains for the non-viewers and the H_2 frequent viewers was only 8.4 points on the total test.

In the first year, the group of Spanish-background children in our sample who watched most often made larger gains than any other group studied. These results were not replicated in the second year study. Both the first and second year Spanish samples were small; the groups came from different parts of the country; and of course, the input of Sesame Street was different in the two years. For one or more of the reasons provided, there remains no definite answer to the question of the effectiveness of Sesame Street for Spanish-background children.

D. Analyses of the Follow-up Children

Following the initial public acclaim of Sesame Street in its first year of telecast, parents and educators began to question the long-term effects of the show on regular viewers. In the short run, both subjective anecdotes and carefully documented objective reports attested to the value of the show. But even among those who were the keenest admirers of Sesame Street, questions were asked such as: "What will become of the first generation of Sesame Street watchers when it enters school?" "Will children who have been regular viewers be turned off by the classroom which, in general, will not be able to compete with Sesame Street in its attention-getting devices?" "Will children who viewed Sesame Street become passive members of their class?" "Will the gains observed among regular viewers of the show give them an advantage over their non-viewing peers with respect to readiness for school, or will the children be bored by early classroom experiences geared to their less knowledgeable peers?"

As well as these questions about preschoolers who were beginning school, there were also questions about the children who, having viewed in the first year, were still not in school. Would they want to continue viewing Sesame Street in its second year, and if they continued viewing, would the benefits be cumulative?

What follows is a report on the analyses done on selected members of the first year Sesame Street sample -- those who, in the first year study, were at-home children from disadvantaged neighborhoods. Some went on to school and some remained at home. Both these groups were studied in the second year. The first year's disadvantaged children came from three sites: Boston, Durham, and Phoenix. Data collection in the second year took much the same form as in the first year: pretesting before the start of the viewing season, posttesting at the end, pre- and posttest Parent Questionnaires, viewing records, and finally, to serve a major follow-up interest in subsequent school behavior of the first-year children, rankings of those children who went on to school were performed by their teachers. The results of this Follow-up Study will be reported in the following pages.

1. Teachers Rankings in the Fall of 1970[1]

Of the 389 at-home disadvantaged children who comprised the original group, 302 were pretested at the start of the second year of Sesame Street. Of these, about 160 went on to Head Start, Kindergarten, or first grade. Finally, of those who went on to school, there were 112 for whom teacher rankings were obtained in the fall of 1970.

As for the original sample in the first year, analyses of data for the children who were ranked in the fall are based on the division of the total group into viewing quartiles.[2] Viewing scores were arrived at by combining responses to questions on viewing records, Year I posttest Parent Questionnaires, and Year II pretest Parent Questionnaires. Thus there is some recognition given the degree to which the children continued to view Sesame Street during the summer between Year I and Year II. Table 44 presents pretest means and gains on selected subtests from the Year I battery and scores common to the Year I and Year II batteries.

It can be seen from these scores that the frequent-viewing children (Q4) were a younger, abler group than the children in the other quartiles. The Q1 and Q2 children were lower in mental age as measured by the Peabody Picture Vocabulary Test. By the time of the Year I posttest, children in all viewing quartiles showed gains in the majority of the tests. However, there were now sizable differences among children in Q2, Q3, and Q4. Those who viewed most clearly gained most. By the time of the pretest in the second year, many of the children, particularly those in Q4, had reached the ceilings on some of the tests. We turn now to the question of what happened to these 112 children when they first entered school.

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[1] This section is based upon an interim report to Children's Television Workshop coauthored by Gita J. Wilder.

[2] See Chapter IB2 of the report for a full description of Year I quartiles computed by combining viewing records, TV logs, and Parent Questionnaire data.

A follow-up technique was needed that would obtain teacher rankings of the study children without singling those children out from their peers for special attention. With this in mind, and with the knowledge that teachers could not be asked to assess certain children and not others without somehow altering their subsequent treatment of both groups, a simple expedient was devised. Teachers of classes in which *any* of the *Sesame Street* follow-up subjects were enrolled were asked to rank *all* of the children in their classes. The task involved their rank-ordering all of their students according to each of the following dimensions: general readiness for school, verbal readiness, quantitative readiness, general intelligence, attitude toward school, relationships with peers, and physical coordination. The actual scales along with the instructions supplied the teachers appear in Appendix I.

Results of the teacher rankings in the fall are presented in Table 45. The rankings are presented by viewing quartiles and represent average centile ranks for follow-up subjects only, *not* their classmates. The resulting ranks were then subjected to the

Kruskal-Wallis one-way analysis of variance.[1]

In all cases, the Q4 (frequent-viewing) children were ranked higher than the other three quartiles. The rankings indicate that the children who were the most frequent viewers of Sesame Street were deemed relatively highly qualified by their teachers in the areas of general readiness and quantitative readiness. This might have been expected since the most frequent viewers had higher pretest scores in the first year than the less frequest viewers. The most interesting result, however, is reflected in the teacher rankings of the childrens' attitudes toward school. In this case, the differences were statistically significant ($p=.005$), and it seems as though the Q4 and Q3 children were considered by their teachers to have better attitudes toward school than Q1 and Q2 children. Contrary to the predictions of boredom and restlessness in school for the sophisticated veterans of Sesame Street teachings, the most frequent viewers were judged to be among the better prepared students with respect to attitude toward school. These same children were ranked significantly higher with respect to peer relations than were the less frequent viewers of the show ($p=.025$), another indication of the degree to which Sesame Street viewers made at least adequate adjustments to school life.

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[1] The Kruskal-Wallis one-way analysis of variance is a non-parametric test for deciding whether independent samples are from different populations. The Kruskal-Wallis technique, in this case, tests the null hypothesis that there are no differences among the four viewing quartiles with respect to rankings. Compared with the F test, the Kruskal-Wallis test has asymptotic efficiency of 95.5 percent. See Siegel, Sidney, Nonparametric Statistics. McGraw-Hill. 1956. pp. 184-193.

The teacher rankings were again administered in the spring of the year, and the results of this reranking are presented below in section 3 of this chapter.

2. Results of All Follow-up Children

Almost all the disadvantaged at-home children who were followed up in the second year of Sesame Street had been viewers during the first year. Some also viewed the show during the repeat of the first year of Sesame Street in the summer of 1970; and then the second year of Sesame Street was available for their viewing during the academic year 1970-1971.

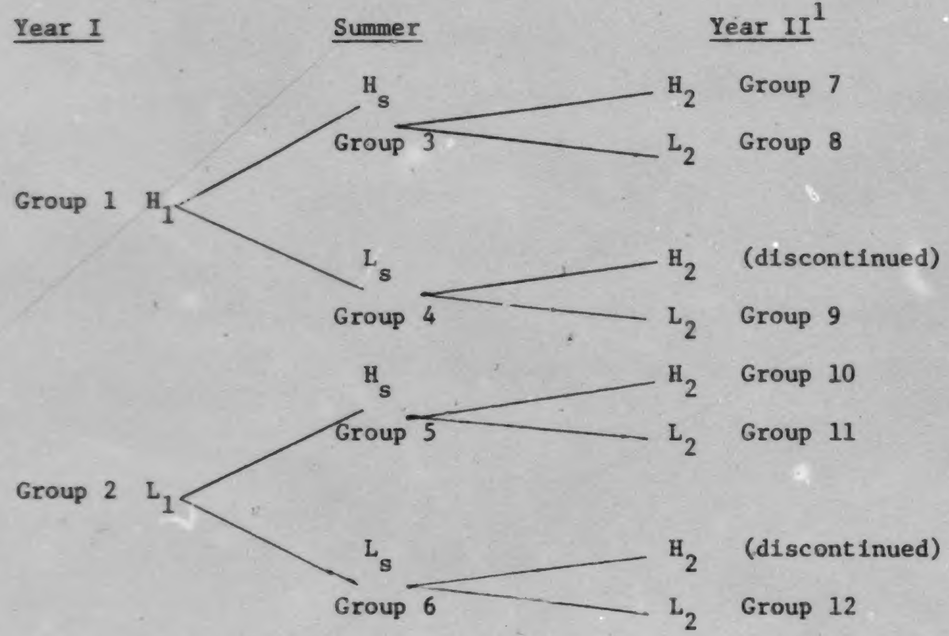
In order to try to extricate the effects of amount of viewing over these three series (Year I, summer, Year II), children were assigned three corresponding viewing scores:

a. Year I score based on Year I TV logs and Year I posttest Parent Questionnaire responses weighted equally. Children were then divided at the median into high and low viewers for Year I (H_1 and L_1).

b. Summer score based on Year II pretest Parent Questionnaire responses. Children were divided at the median into high and low viewers for the summer series (H_s and L_s).

c. Year II score based on Year II viewing records and Year II Posttest Questionnaire responses weighted equally. Children were then divided at the median into high and low viewers for Year II (H_2 and L_2).

This procedure allowed the categorization of the children into 14 groups:


Year I
Summer
Year II[1]
H_s
Group 3
H_2 Group 7
L_2 Group 8
Group 1 H_1
L_s
Group 4
H_2 (discontinued)
L_2 Group 9
H_s
Group 5
H_2 Group 10
L_2 Group 11
Group 2 L_1
L_s
Group 6
H_2 (discontinued)
L_2 Group 12

Only two children were in the H_1 L_s H_2 group and two in the L_1 L_s H_2 group, so these groups were dropped from consideration in the subsequent analyses. The results of the analyses involving the remaining 12 groups are summarized in Tables 47 through 52.

-- Table 47 presents pretest and gain scores on 77 items that were common to the Year I and Year II tests for all follow-up children by the 12 viewing groups and Peabody scores.

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[1] Note from Table 52 that the correlations among the three viewing indices (Year I, summer, and Year II) are all positive. However, there is a low correlation between Year I viewing and summer and Year II viewing (.46 and .45 respectively). There is a relatively high correlation between summer viewing and Year II viewing (.85). This suggests that frequent viewing over the three series (about 400 shows) was relatively rare, but that some children did view frequently over the entire period.

-- Table 48 presents total scores on the Year I and Year II test batteries for all follow-up children by the 12 viewing groups.

-- Table 49 presents total scores and gains on the Year II test battery for children at home in Year II and for children at school in Year II by the six Year II viewing groups.

-- Table 50 presents Parent Questionnaire scales for the follow-up children by the four viewing groups at the end of the summer.

-- Table 51 presents Parent Questionnaire scales for the follow-up children by the six viewing groups from Year II.

-- Table 52 presents the intercorrelations of total test scores, gains, and viewing scores for all follow-up children.

A warning should be made at the outset of the presentation of the results that the viewing groups reported upon are subject to the problem of self-selection. Frequent viewers selected themselves by their viewing behavior for this category, and they had higher attainments at pretest. For example, the pretest total in Year I for H_1 children was 83.7 and for L_1 children it was 73.4. The Peabody IQ for H_1 children was 85.5 and for L_1 children it was 75.2. Furthermore, from the Parent Questionnaire scales, it can be seen that H_1 viewers came from homes with relatively higher SES and greater affluence.

Given this problem, we will first describe the results we obtained from all follow-up children. Then, in the next section, an analysis will be presented (the Follow-up Age Cohorts Study) that provides a clearer picture of the effects of the second year of viewing on at-home children, most of whom had viewed in the first year.

An examination of Year I data reveals that H_1 children not only started higher than L_1 children but also gained more (gains of 39.9 and 29.6 respectively). Both gained well but note that both H_1 and L_1 children viewed the show. H_1 children came mainly from Q3 children and L_1 children from Q2 children, as reported upon the first year report. Thus:

		Year I	
		Pretest	Gain
From first year study:	Q2	76.3	29.4
	Q3	79.5	40.2
From Follow-up Study:	L_1	73.4	29.6
	H_1	83.7	39.9

The major point of this presentation of results is that almost all follow-up children did view Sesame Street in Year I -- some (H_1) very frequently (about four or five times a week) and some (L_1) less frequently (about two or three times a week).

The summer results as noted by gains on common items to pretest in Year II show that differences between H_1 and L_1 were maintained but not increased.

Common Items Only

		Total at Pretest Year I	Gain to Posttest Year I	Further Gain to Pretest Year II	Total at Pretest Year II
H_1	H_s	35.3	15.1	5.9	56.3
	L_s	37.4	14.6	3.0	55.0
L_1	H_s	31.6	13.5	3.4	48.5
	L_s	31.6	10.3	8.5	50.4

On the Year II battery at pretest, the three groups descended from H_1 scored significantly higher than the three groups descended from L_1.

Year II Results

Group	Viewing	Pretest Score	Gain	Posttest Score
7	$H_1\ H_s\ H_2$	125.3	19.1	144.4
8	$H_1\ H_s\ L_2$	131.5	19.0	150.5
9	$H_1\ L_s\ L_2$	123.4	25.2	148.6
10	$L_1\ H_s\ H_2$	106.8	28.1	134.9
11	$L_1\ H_s\ L_2$	111.9	22.2	134.1
12	$L_1\ L_s\ L_2$	112.0	26.2	138.2

Gains in Year II favored groups 10, 11, and 12 (less frequent viewers in Year I), possibly because these children were then over 5-1/2-years-old and were learning some of the information and skills that the more frequent viewers had learned earlier.

This is confirmed in the intercorrelation matrix where Year I viewing is positively correlated with Year I gains (.27), summer viewing is positively correlated with gains in the summer on common items (.15), and Year II viewing is uncorrelated with Year II gains (-.03).

Children who remained at home during both years had lower pretest scores in Year I, gained less over the two years, and were two to three months younger than those who went to school in the second year. More able children tend to go to school early and seem to gain from this additional experience.

One other result that deserves mention concerns the scores of the follow-up children on the Peabody Picture Vocabulary Test. The significant difference between gains of the New Study not-encouraged and encouraged children on Peabody IQ has already been noted -- not-encouraged children's scores fell from pretest to posttest while encouraged children's scores rose. In the Follow-up Study all children viewed Sesame Street at least some of the time. The Peabody Test was administered at the pretest Year I, pretest Year II, and posttest Year II. A substantial increase in Peabody IQ was noted from pretest Year I to pretest Year II for all the groups.

	Peabody IQ	
Group	Pretest Year I	Pretest Year II
3 H_1 H_s	83.0	87.7
4 H_1 L_s	89.6	92.7
5 L_1 H_s	74.0	81.4
6 L_1 L_s	75.8	81.2

This trend in gains appears even more marked when the children's scores over the full period of the Follow-up Study are considered:

Peabody IQ

Group	Pretest Year I	Pretest Year II	Posttest Year II	Overall Gain
7 H_1 H_s H_2	82.0	88.8	94.5	15.5
8 H_1 H_s L_2	84.5	86.0	95.8	11.3
9 H_1 L_s L_2	88.8	91.8	98.0	9.2
10 L_1 H_s H_2	71.9	80.1	86.8	14.9
11 L_1 H_s L_2	76.9	83.0	86.0	9.1
12 L_1 L_s L_2	75.8	81.4	89.9	14.1

Of course, not only is it true that almost all the children viewed and almost all the children gained. It is also possibly true that the Peabody standardization and norming procedures are unrelated to current realities of our sampled children. However, no evidence in longitudinal studies of preschool disadvantaged children could be found to allow the substantial gains of the Sesame Street viewers to be attributed simply to poor norming of the Peabody.

As well, in the presentation of Peabody scores of the New Study children, no differences in pretest Peabody IQ were observed among the 3-, 4-, and 5-year-olds as they would if the Peabody norming procedures favored older disadvantaged children.

It is clear that the evidence presented in this section is quite insufficient to allow a causal relationship between viewing and gain in Peabody IQ to be inferred. On the other hand, as was noted in the New Study, where a significant relationship was found, the possibility of there being a causal relationship cannot be ruled out and this is one aspect of the Sesame Street impact that deserves further research.

3. The Age Cohorts Study for Follow-up Children

There are some major problems associated with the interpretation of the results of the Follow-up Study presented above in Section 2. The first year results indicated that almost all the children were viewers of Sesame Street. Their initial breakdown into high and low viewers (H_1 and L_1) resulted in pretest and gain scores most similar to those reported in the first year for Q3 children who viewed four to five times a week and Q2 children who viewed two to three times a week. In addition, frequent viewers selected themselves. When compared with light viewers, the frequent viewers were, even at pretest, more proficient in the areas measured by the test battery and more affluent in the areas measured by the Parent Questionnaires.

In the resultant descriptive data, therefore, amount of viewing was confounded with pretest achievement and home background factors. In addition, the descriptive data present the results of light viewers versus frequent viewers with no control group of non-viewers.

The problem was to unconfound viewing from other factors and to discover the effects of the show against a group of non-viewers. The Age-Cohorts Study, used in the first year report, provided an answer (See Appendix A). What follows is the Follow-up Age Cohorts Study.

In order to determine the effects of the second year of Sesame Street on children who had viewed the first year we selected two independent groups of children. We took those children who were 63 to 68 months old at pretest in Year II (Cohort 1) and compared them with children who were 63 to 68 months old at posttest in Year II (Cohort 2). These groups were independent since no child in Cohort 1 could also be in Cohort 2. The age range of six months spanned the six months of the show, insured that a sufficient number of children were in each group, and allowed a comparison when the two groups were the same age. The two differences between the two groups at the point of comparison are that Cohort 2 had viewed in the second year while Cohort 1 had not and Cohort 2 had experienced one additional testing session.

The two cohorts were restricted to children who were at home during both years. Had at-school children been included, the comparison of the two cohorts would have been unreasonable because only Cohort 2 would have had six months of schooling. Children were not further divided into viewing groups since all children had viewed the show, and the original descriptive analyses had indicated the similarity of the two cohorts in amount of viewing during the first year.

The cohorts were both assembled from children in the same areas, from the same kinds of homes, and at the same age at the point of comparison. The results of the test scores of the cohorts, assuming this comparability, should reveal the effects of viewing the first and second years of the show versus viewing only the first year.

The reader should examine the following tables and figures which will be discussed in the presentation of the results of The Follow-up Age Cohorts Study.

-- Table 53 which presents pretest scores of Cohort 1 and posttest scores of Cohort 2.

-- Table 54 which presents Parent Questionnaire scales for Cohort 1 at pretest and for Cohort 2 at posttest and demographic characteristics of Cohort 1 and Cohort 2.

-- Table 55 which presents univariate analyses of variance for the pretest scores of Cohort 1 and the posttest scores of Cohort 2.

-- Table 56 which presents the multivariate analyses of variance (MANOVA) for pretest scores of Cohort 1 and posttest scores of Cohort 2.

-- Figures 7a and 7b which present graphically the percentage of items answered correctly by Cohort 1 at pretest and Cohort 2 at posttest.

The main assumption underlying this Follow-up Age Cohorts design is that there are no major differences between the two cohorts other than the main difference being studied, namely the viewing of the second year of Sesame Street by Cohort 2. A look at some of the data confirms the similarity of the two groups.

	Cohort 1	Cohort 2
Mean age at comparison	65.4	65.5
Pretest mean years of parents education	10.4	10.1
IQ at pretest	85.3	80.6
Year 1 Viewing Score	10.1	9.6
Summer Viewing Score	8.0	7.8

At the point of comparison Cohorts 1 and 2 were the same age (a mean difference of three days). The age distribution of the two groups showed that one-half of the children in each group were above the mean age for the group and one-half were below. The Parent Questionnaire scales for the two groups showed no significant differences at pretest, and the .3 years difference in mean years of education of the parents was not significant. The Peabody IQ scores of the two groups at pretest favored Cohort 1 by 4.7 points, and the amount of viewing scores indicated both groups had watched Sesame Street to a high degree. In addition, the children in the two cohorts came from the three sites in equal proportions. Most were English speaking, slightly more were male, most were encouraged to view, and all had been observed during the first year of the show. The data therefore confirm that the only clear difference between the two cohorts is that Cohort 1 had been tested three times and Cohort 2 four times -- and research suggests that this would not be likely to produce large differences in test scores. The two cohorts were strikingly similar, and any differences that emerged (e.g., in amount of viewing during the first year) favored Cohort 1, the control group in the Age Cohorts Study.

A comparison of the test scores of Cohort 1 (Year I viewers) and Cohort 2 (Year I and II viewers) can now be made, and differences between the two groups can reasonably be attributed to the viewing of the second year of Sesame Street. Table 53 presents the pretest scores of Cohort 1 and posttest scores of Cohort 2. It appears that in many areas the two groups

In addition, tests on the attitude measures indicated that two were significant at the .05 level:

Attitude to School
Attitude to Race of Others

Of the 29 subtests, the scores of Cohort 2 on twelve were significantly higher than the scores of Cohort 1. These twelve subtests included scales of three "old" goals and eleven "new" goals. Of the remaining 17 subtests, 12 were testing "old" goal areas that had been taught on both years of the show. The children who had viewed both years of the show performed significantly better in the new goal areas and in two of the three attitude areas tested than children who had viewed only the first year.

Two areas of interest are attitude to school and attitude to the race of others. The significantly higher score on the attitude to school test by Cohort 2 reconfirms the results obtained in the teacher ratings, that the most frequent viewers of the show have a better attitude to school than the less frequent viewers. The results on the attitude to race of others subtest is equally intriguing, though we hesitate to make claims in this area on the basis of this admittedly small and unreplicated study. However, both results are potentially among the most important thus far reported and certainly deserve further study.

One other area of interest is the scores of the two cohorts on the Peabody Picture Vocabulary Test.

	Cohort 1 (pretest)	Cohort 2 (posttest)
Raw Score	45.1	48.4
Mental Age	54.9	61.3
IQ	85.3	88.9

The differences between these scores of Cohort 1 at pretest and Cohort 2 at posttest were not statistically significant (p=.135). However, statistical tests could not take into account the following facts. At pretest, when Cohort 1 was six months older than Cohort 2, Cohort 1 had a mean mental age 6.1 months higher. However, at the point of comparison when the cohorts were the same age, Cohort 2 had a mean mental age 6.4 months higher than Cohort 1. A comparison of the Peabody IQ scores shows much the same thing. Cohort 2 started 4.7 IQ points lower and ended 3.6 IQ points higher than Cohort 1 at the point of comparison. While statistical tests showed the point of comparison results to be not significant, the tendency of a rise in Peabody scores noted for the viewers in the New Study and in the descriptive data of the Follow-up Study is noted once more.

4. Teacher Rankings in the Spring of 1971

The teachers were again asked to rank the follow-up at-school group in the spring of 1971. In addition to the seven dimensions used in the fall, teachers were also asked to rank their children with respect to cooperation. Of the 112 children who had been ranked in the fall, 84 were again ranked in the spring. The analyses of teacher rankings for this group of 84 children were performed according to the revised viewing groups reflecting the amount of viewing of the children during the first year, the summer, and the second year.

Table 57 presents the reanalysis of the fall rankings according to the new viewing groups which separated high and low viewers in the first year and during the summer. In all cases, the first year high viewing groups (H_1 H_s and H_1 L_s) were ranked higher than the first year low viewing groups (L_1 H_s and L_1 L_s). The differences in the teacher rankings of the children's attitudes to school were statistically significant at the .01 level and reconfirm the analysis done on all 112 children who were originally ranked. However, the reduction in the number of children and the regrouping of the children by the new viewing groups meant that the differences in rankings on the peer relationship scale were no longer significant.

Table 58 presents intercorrelations of the pretest teacher rankings, posttest teacher rankings, and the attitude scores of the at-school follow-up children. At pretest and at posttest, intercorrelations among the child measures were high, and intercorrelations among teacher rankings were high. Pretest to posttest correlations of the teacher rankings were high, but correlations of the child scores were moderate to low. Both at pretest and posttest, the correlations between rankings and scores were moderate to low.

Results of the teacher rankings of the 84 children in the spring of 1971 are presented in Table 59. These rankings were done after all children had spent a year in school. The 84 children were divided into revised viewing groups 7 through 12 to reflect the amount of viewing that occurred in the first year, over the summer, and during the second year. The necessity for dividing the children into six groups resulted in very small numbers of children in each viewing group. There were no significant differences in the rankings of the children on any of the eight scales in the spring.

There are several possible explanations for the change between the fall and spring. First, all of the follow-up children had watched Sesame Street to some degree, and any descriptive analysis of these children attempts to discover the effects of light viewing versus heavy viewing. Second, all of the children had now been in school for a year, and noted differences or lack of differences may be attributable to the school situation as well as to Sesame Street.

CHAPTER IV. SUMMARY AND CONCLUSIONS

A. Summary of Project Activities

1. The First Year of Sesame Street

In order to discover the effects of Sesame Street in its first year, 3- through 5-year-old children were studied in five sites. It was found that Sesame Street had a significant impact in the goal areas of letters, numbers, geometric forms, sorting, and classification. In general, all groups of viewing children benefited -- 3-, 4-, and 5-year-olds, disadvantaged, urban, rural, Spanish-background, advantaged suburban, boys, girls, at home, and at school. A summary of the first year report is presented in Appendix A.

Some questions were raised concerning the first year report, so some further analyses were performed. These substantiated the first year conclusions by indicating that:

-- there were no significant differences between the gains of disadvantaged white children and disadvantaged black children.

-- the significant gains of the viewers were not an artifact of the amount of viewing index entered into the analyses.

-- disadvantaged frequent viewers gained as much as advantaged frequent viewers.

-- the 3-year-old frequent viewers had higher posttest attainments than older children who viewed less frequently.

2. Summary of the Second Year Evaluation

A second year evaluation of Sesame Street was carried out. One aspect of the second year evaluation (The New Study) was intended as a replication of the first year and as a means of assessing the impact of the second year's extended and new goal areas. A second aspect of the second year evaluation was a follow-up of the at-home disadvantaged children who were subjects in the first year evaluation (The Follow-up Study).

The New Study was conducted with disadvantaged, at-home children in Winston-Salem, North Carolina, and Los Angeles, California. In Winston-Salem, children who had never viewed Sesame Street were assigned to encouraged or not-encouraged groups. The encouraged group was given television cable facilities so that the second year of Sesame Street could be viewed in their homes. Children in this group were encouraged to view by ETS field staff who gave to the children Sesame Street souvenirs and who pointed out to the mothers the advantage of having the children view regularly. The not-encouraged children were not so encouraged nor were they provided with the television cable. They could not, therefore, view the show in their homes.

In Los Angeles, children who had not viewed Sesame Street in its first year were randomly assigned to encouraged and not-encouraged groups. Encouraged children had UHF adaptors connected to their television sets if they needed the device to obtain the local educational television channel. The encouragement treatment was provided as in Winston-Salem.

The subjects in the New Study in both sites were 3- through 5-year-old disadvantaged children who had not viewed the first year of Sesame Street and who had never had preschool (Head Start, Day Care, or Nursery School) experiences. A small number of 3- through 5-year-old children from Spanish backgrounds in Los Angeles were also included in the sampling and were similarly assigned to experimental (encouraged) and control (not-encouraged) conditions. For purposes of analyses this group was considered separately.

A second aspect of the second year evaluation of Sesame Street was the continued study of those subjects in the first year evaluation who were disadvantaged, at-home children (The Follow-up Study). The sampling of these children had been conducted in the first year in Boston, Massachusetts; Durham, North Carolina; and Phoenix, Arizona. The children were left in the encouraged or not-encouraged groups to which they had been assigned in the first year.

The measuring instruments used in the second year were administered both in the New Study and the Follow-up Study. They included:

-- Tests of the children individually administered at pretest and posttest. The tests were based on those developed for the first year evaluation, but the tests were revised to reflect the new and revised goals for the second year.

-- Parent Questionnaires administered at pretest and posttest. These instruments were used to assess the home backgrounds of the children (e.g., socioeconomic status, parents' aspiration for the children), the TV viewing habits of the children, including, when appropriate, Sesame Street viewing, and changes in the homes that might be attributable to Sesame Street viewing (e.g., attitudes to children's learning, use of educational playthings).

-- Viewing records administered once a month. These records were checklists of TV programs and the parent checked those shows viewed by the child on a specified day. The data obtained were combined with Parent Questionnaire responses to form a viewing index.

-- Content analysis which provided a detailed description of the amount of time spent on each goal and the frequency with which various presentation techniques (e.g., animation, Muppets, film sequences) were used for each goal. The content analysis was conducted through a 30-second time sampling technique and was identical to the one conducted in the first year of Sesame Street.

-- Teacher Ranking questionnaires administered as part of the Follow-up Study. Over half the children in this study went on to school in the second year of Sesame Street, and the ranking procedure was a means of assessing their readiness for school. The teachers of all classes where one or more follow-up children were enrolled were asked to rank order all the children in their classes on several criteria: general readiness for school, verbal readiness, quantitative readiness, general intelligence, attitude toward school, relationships with peers, motor coordination, and, at posttest only, cooperation. It was then possible to compare the average rankings of frequent viewers with those of less frequent and non-viewers.

Field operations in the second year followed the principles found successful in the first year. In each site we employed a local coordinator who knew the area well and who was capable of acting in a supervisory role. The coordinators, in turn, hired community members as testers. All training was carried out by ETS central office staff. All data were given careful screening. When a tester's work seemed suspect, all tests administered by that person were rejected. This led both to a high rejection rate and to a feeling of confidence in the quality of the data entered into the analyses. Of 858 children pretested in the five sites for the two studies, 143 were rejected in the New Study when it was found on double checking that children had gone to school or had viewed Sesame Street in the first year, or when tests were improperly administered. In all, 710 children were completely and acceptably pretested and, after attrition over the six months of the show, 632 of these were completely posttested.

For purposes of subsequent analyses, there were 283 children in the New Study, 283 (coincidentally) in the Follow-up Study, and 66 in the Spanish subsection of the New Study.

B. Summary of Results and Conclusions

The major results and conclusions will be summarized in terms of the findings from the New Study, the Spanish Study, and the Follow-up Study. Before presenting this summary, note, that about 30 percent of the time on the show was spent on the goal areas of pre-reading and numbers, that over five percent was spent on each of the goal areas related to self, natural environment, and perceptual discrimination, and that less than five percent was spent on each of the goal areas of geometric forms, relational terms, classification, problem solving, social units, social interactions and man-made environment.

The evaluation of the second year of Sesame Street was directed at finding answers to a number of questions. The results of the evaluation will be summarized and the questions and the overall conclusions will be presented.

The New Study

Children in the New Study had low pretest attainments. Our indicators of SES and home environment factors indicated that the children came from disadvantaged backgrounds. However, a direct comparison between the results of the New Study and those obtained in the first year of Sesame Street cannot be made. The children studied in the second year had somewhat lower pretest attainments than the children studied in the first year. As well, the two series of Sesame Street were different, the second year being somewhat broader in scope and containing greater difficulty levels in many of the continued goal areas.

About half of the sampled children were encouraged to view the show and the other half were not encouraged. The experimental manipulation of the children in the New Study was successful, with 121 (93 percent) of the 130 encouraged children viewing Sesame Street and 99 (65 percent) of the 153 not-encouraged children not viewing at all. The not-encouraged children who viewed did so usually about two or three times a week and watched about only half an hour of each show. On the other hand, the encouraged viewers tended to view more frequently (four times a week) and watched almost all of each show viewed.

The children in the not-encouraged and encouraged groups were otherwise quite comparable. At pretest there were no systematic differences in their test scores, Peabody Mental Age, chronological age, and SES. They came from the two sites in about the same proportions. Thus, given that they were comparable at pretest, but quite divergent in terms of their viewing of Sesame Street, it is possible to attribute differences in gains from pretest to posttest to Sesame Street viewing and to the encouragement treatment.

Analyses of the data in terms of the gains of the not-encouraged versus gains of the encouraged children were performed in order to answer the questions initially posed.

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How effective is Sesame Street for disadvantaged preschool-aged children?

The evaluation of the second year of Sesame Street supported the first year findings that the show was effective in many of its goal areas for 3-, 4-, and 5-year-old disadvantaged children. In its second year, Sesame Street set itself 63 goal areas to work in. Twenty-nine of them were assessed by this study, and they included most of the areas that CTW wanted to emphasize. Of the 29 goal areas assessed, the show seemed to have a clear impact in 13, an equivocal impact in 10, and no significant impact in six.

The goal areas where statistically significant effects were obtained in the second year were: function of body parts, naming geometric forms, roles of community members, matching by form, naming letters, letter sounds, sight reading, recognizing numbers, naming numbers, counting, relational terms, classification (single criterion), and sorting. As well there was evidence that Sesame Street might be having an effect in other goals areas but the results were not as clear. These areas were: naming body parts, recognizing letters, initial sounds, decoding, left-right orientation, counting strategies, number/numeral correspondence, addition and subtraction, double classification, and emotions. There were also a number of areas where Sesame Street had no significant impact. These were recognizing geometric forms, matching by position, alphabet recitation, enumeration, conservation, and parts of the whole. In no instance did the show seem to have a negative impact.

In interpreting these results it should be remembered that the show in its second year was experimentally looking to establish its boundaries of scope and difficulty level. Some of its goal changes proved worthwhile (e.g., counting 1-20 rather than 1-10); some proved too ambitious (e.g., conservation). Further, the population sampled in this second year New Study was 3- through 5-year-old at-home disadvantaged children who had not viewed the show in its first season. It would be speculative to guess at what the effects of the show might have been on ing mastery of established goal areas.

If these interpretive cautions are kept in mind, if the amount of time spent on each goal in the second year is also kept in mind, and if it is realized that a goal area might well be included even though it is only helpful to children with very low attainments, then the following overall judgments might be made:

These goal areas seemed to be appropriate as is -- naming body parts, function of body parts, forms, community members, counting 1 - 20, relational terms.

These goal areas seemed to be appropriate but may need more time spent on teaching them -- matching, naming letters, left-right orientation, alphabet, naming numbers 1 - 10, enumerating five objects or fewer, counting strategies, classification, parts of whole emotions.

These goal areas seemed to be too difficult though a reasonable amount of time was spent on them -- letter sounds, initial sounds, decoding, reading sight words (without other visual clues).

These goal areas seemed too difficult but little time was spent on them (less then 1.5 percent each) -- naming numbers 11 - 20, conservation, number/numeral correspondence, addition and subtraction, double classification, sorting.

This goal area seemed inappropriate in that children learned this skill without direct teaching -- counting within 1 - 20.

In general, it would seem that the experimental second year of Sesame Street revealed that disadvantaged preschoolers countinued to benefit from an emphasis on basic knowledge and skills. Inasmuch as the goals were changed to stress more complex knowledge and skills, then the disadvantaged 3- through 5-year old gains were less than they might have been. On the other hand, retaining only the basic goal areas could be deterimental to the learning of older children or more advantaged children. At this point, after two experimental years of the show, the boundaries are becoming more distinct between these two opposing needs.

As well as this consideration of the goals and the curriculum, we also studied the differential experimental effects of viewing and encouragement to view. Analyses were performed to separate the effects of viewing from the effects of encouragement. It was found that both viewing and encouragement were significant factors affecting gain scores. Thus, encouragement had an overall impact on scores, and this has implications for the utilization and field services operations of CTW. It will be recalled that in the first year evaluation disadvantaged viewers gained as much as advantaged viewers; but that the tendency was for a greater proportion of the advantaged to view. An unanswered question was what would happen if disadvantaged children were to view the show because of some conscious program to get them to do so. The answer seems to be that such encouraged viewers will do at least as well as children who view entirely of their own volition. Further, the act of encouragement, at least over a six month period, itself may have beneficial effects. The child's mother is more likely to view with the child and then talk about the show with the child if encouragement to view occurs.

As well as the main effects of the show noted in the preceding paragraphs, the topic of side-effects (unintended outcomes) is also germane to this discussion of the effects of Sesame Street. Three domains of unintended outcomes were investigated in the New Study of the effects on 3- through 5-year-old at-home disadvantaged children of viewing Sesame Street for the first time in its second season.

In the home background domain, it was thought, for example, that parental expectations of the child, parental attitudes toward education, and the television viewing habits of the child might be affected by the child's viewing of Sesame Street. No such differences seemed to emerge. It would seem that the show, at least over a six month period, did not affect such relatively stable elements in the child's home background.

A second side-effect of interest was attitudinal. Results of the three attitude areas assessed in the New Study proved inconclusive. This was due in part to problems encountered in assessing the attitudes of 3- through 5-year-old children. As we have seen, significant results in the attitude domain were obtained in the Follow-up Study where the children were a year older and had viewed over a two year period.

A third side-effect of interest was that assessed by the Peabody Picture Vocabulary Test. Significant differences favoring the viewers were obtained on this measure. The PPVT has been used not only as a measure of the child's oral vocabulary but also as a means of estimating mental age and IQ. It was included as a dependent variable because a number of educators had pointed out to us their belief that the aptitude and readiness scores of children entering school were being positively affected by the show. This belief seems to be confirmed, at least in terms of this test of vocabulary.

In summary, the evaluation of Sesame Street in its second season indicated that this educational television program had a positive impact on at-home disadvantaged preschoolers at least in terms of the goals it set itself. Perhaps, too, more general educational effects are also occurring.

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What are the effects of such variables as the age, sex, socioeconomic status, and level of achievement of the children?

The analyses indicated that the child's age and sex did not differentially affect the results. Overall and within general goal areas no significant interactions were obtained between age and encouragement. This is consonant with the first year evaluation where the show was also found to be generally effective for 3-, 4-, and 5-year olds and for boys and girls. The one qualification to this conclusion is that, in some goal areas, five-year-olds gained more, irrespective of encouragement, than the children in the other two age groups. However, the major point to be made here is that the show itself did not favor viewers at one age level in comparison with viewers at a different age level.

The relationship between socioeconomic status and gains is partly indicated by the fact that the correlation between SES and total gain score among the encouraged children was low and negative but significant (-.24). Note that the children studied (all being from disadvantaged areas) were relatively homogeneous with respect to SES, thereby lowering the possibility of finding a significant relationship. Thus, the fact that there was a significant negative relationship between SES and gain scores suggests that the show may be having its major impact among those with the lowest socioeconomic status.

An estimate of the effect of the initial level of achievement on the impact of the show on the children in the New Study can be obtained from the intercorrelations of pretest and gain scores among the encouraged children. Here again the correlations tend to be negative and significant. It is difficult to interpret this because some of this relationship could be due to measurement artifacts. Nonetheless it appears that the impact of the show is somewhat influenced by the level of achievement of the viewer with those having low status at pretest tending to gain more.

The Spanish-background Children

A small group of children from Spanish backgrounds was sampled in Los Angeles. The children had not viewed the first year of *Sesame Street*, and they were randomly assigned to encouraged and not-encouraged conditions to answer the question:

Do children from Spanish-backgrounds benefit from *Sesame Street*?

The first year evaluation noted unusually large gains for the Spanish-background viewers. An effort was made in the second year to verify the first year findings. Unfortunately, the results of the study conducted in the second year were inconclusive. The experimental and control conditions broke down when, for undetermined reasons, almost all the children in the sample viewed the show. The unusually large gains noted in the first year were not again noted. Although the viewers in the second year gained more than the eight non-viewers, the differences were not significant. It would seem that a definitive answer to the question of the impact of *Sesame Street* on Spanish-background children is not yet available.

The Follow-up Study

Disadvantaged children who were studied at home in the first year's evaluation were followed up for a second year. There were 283 children who remained in the sample for the two years of the study. Of these, about 54 percent began school during the second year and the rest remained at home. All follow-up children were pretested and posttested at home and all their parents completed Parent Questionnaires and viewing records. In addition, the teachers of the children who started school completed questionnaires ranking the children as to their readiness for school on several dimensions.

Analyses were then carried out to answer the following questions:

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What are the effects on disadvantaged children who watched the first year of Sesame Street at home and watched the second year of Sesame Street at home?

The major difficulty experienced in attempting to answer this question was that virtually all the children studied viewed the show at least some of the time. The first season (November, 1969 - May, 1970) was immediately followed by a rerun during the summer, and then the second season was telecast. In addition, as in the first year's analyses of these children, the self-selection of viewing resulted in the relatively more able and more advantaged children becoming the more frequent viewers of Sesame Street. High viewers watched the show on the average of four to five times a week and low viewers an average of two to three times a week. The descriptive analyses showed that the high viewers in Year I gained more than the low viewers, that the high summer viewers gained slightly more than the low summer viewers, and that the high Year II viewers gained less than the low

Year II viewers. At the end of the two year study high viewers had maintained their initial advantage over low viewers.

One interesting occurrence were the large and consistent gains made by all follow-up children on the Peabody Picture Vocabulary Test. Average gains of the viewing groups over the eighteen months ranged from 9.1 IQ points to 15.5 IQ points.

The difficulty in interpreting these results was overcome by the Follow-up Age Cohorts Study. This study allowed a comparison of the status of children at pretest of the second year with comparable children at the posttest of the second year. That is, we could compare children who had viewed in the first year and summer (Cohort 1) with children who had similarly viewed the first year and summer but had also viewed the second season (Cohort 2).

It was found that the two cohorts were very similar with respect to their mean age and the mean years of their parents' education; the two cohorts had similar proportions from the three sites, from the two sexes, and from the two language groups sampled; in both cohorts most children were encouraged to view, and all had been observed viewing the show in the first year. In effect, there were no major differences between the two cohorts other than the main difference being studied, namely the viewing of the second season of Sesame Street by Cohort 2.

The major finding was that Sesame Street in its second year seemed to have an effect in at least two major domains. First, in the cognitive domain, Cohort 2 children performed better on the more complex goals than Cohort 1 children. There were eleven subgoals where significant effects were noted and, of these, eight were new or revised from the first year. Conversely, differences in most old and simple goal area scores were not significant. The second year of teaching to the same goal areas was seemingly less effective because much was already learned in the first year. The implication is that if the Sesame Street producers want the show to have a positive educational impact for children who view it for more than one year, they should attempt to introduce some new goal areas each year.

A second domain where significant effects were noted was attitudinal. Cohort 2 children (twelve months' exposure to the show) had significantly more positive attitudes to school and to race of others than Cohort 1 children (eighteen months' exposure to the show). Attitude change was not a goal of the show, and there is little previous evidence in the research literature that a television show, even one viewed over an extended period, might have a measurable impact on attitudes. This is a topic where increased attention seems to be highly desirable. If Sesame Street can have an impact on attitudes to the race of others and to school, one has uneasy feelings about the effects on attitudes of young viewers that other popular television might be having.

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What are the effects on children who watched the first year of Sesame Street at home and subsequently attended school?

The major focus here was to assess the effects of children's Sesame Street viewing on their first year of school. The procedure used was to have teachers rank all the children in their class on a number of criteria. The rankings of the few children who were subjects of this study were then abstracted. The teachers did not know which children were subjects. The ranking procedure was used in the autumn of 1970 when the children had been in school about a month and again in the spring of 1971 when the children had been in school about eight months. The autumn ranking of 112 children indicated that children who viewed Sesame Street most during its first year (including the summer reruns) were most highly regarded by their teachers on seven criteria. On two of the criteria, attitude to school and peer relationships, differences among the rankings of children who had watched Sesame Street in varying amounts were significant. The one where differences by amount of viewing were least apparent was physical coordination, an area hardly susceptible to the influence of television.

Note that while the general relationship is clear that the more children viewed, the higher they were ranked, no causality can be inferred. That is, the frequent viewers also were somewhat younger and had somewhat higher attainments at the outset of the study (in the pretest of the first year). Therefore, while frequent viewers were more highly ranked, the higher rankings could have been a function of factors other than the frequent viewing. However, even if a positive causal influence cannot be drawn, it is reasonable from these data to deny a criticism of the show that viewing Sesame Street would have the effect of "turning off" children when they arrived in school. The argument was at least in part based on the idea that school would be dull in comparison with the sensory impact of Sesame Street. The results of the fall teacher rankings do not bear out this criticism. Rather it would seem that if children arrive at school with an adequate background of basic information and skills, they will find school more interesting and be judged more highly by teachers.

The same procedure was carried out in the spring of 1971. The results of these spring rankings were not significant, perhaps in part because the number of children ranked had fallen to 88. As well, however, infrequent viewers in the first year sometimes became frequent viewers in the second year of the show. Thus almost all children in the study had viewed the show at one time or another by the spring of 1971. In these circumstances, differences in rankings that might have been caused by Sesame Street could not be ascertained. The question of the effect of Sesame Street on children's adjustment to school is important. While the stated gaols of the show do not extend to such ambitious realms, there remains the hope that since Sesame Street had significant impact on a sizable proportion of its goals, these effects would carry over into at least the early months of schooling. The results so far obtained suggest that this hope might be a reality though definitive research has not yet been carried out.

Postscript

This is our second and probably our last major evaluation of Sesame Street. Looking back over the past three years, we are provided with some data for future nostalgia. We will recall the problems: Would we be accepted in the homes of the ghetto disadvantaged? Could we design tests that poorly educated people could administer properly? Could we design tests that would be reliable yet sensitive enough to assess growth in 3- through 5-year-old children? Would we be able, in a few months, to edit, analyze, interpret, and report on the massive data collected in the studies?

We will recall such setbacks as when we rejected data because of some incompetent testers, when the computer was struck by lightning just as our data were being put through an elaborate statistical analysis, and when we were told by a community group leader that it was not possible to work in one of our prospective sites (a decision later reversed).

We will remember the pessimists: "Not enough of the children will watch this show -- it's on ETV stations and it's experimental after all." "Do you really think little kids will learn from a TV show that they'll see at most only an hour a day?" "Even if the kids do learn, you'll never be able to extract the effects given all the other things that happen to them."

And we will also remember rather well still another category of comments that emerged after the first year report was published. "Well what did you expect? Everyone knows that children learn from television. No one would have believed you if you'd come up with negative results."

So the two major evaluations, spread over the past three years, have provided us with some rich experiences. They have also, however, provided answers to a number of important questions. For example, they have shown that large-scale field evaluations can produce interpretable and positive results even when preschool children are the focus of attention. They have shown that gains can be reliably assessed even with 3-year-olds and even with measuring instruments that are uncomplicated and simple to administer. They have shown that children learn from a combination of educational television that is entertaining and that this learning encompasses both cognitive and attitudinal domains and generalizes somewhat too.

Clearly not all the data collected on the studies have been fully analyzed, not all the important questions have been answered, and not all the answers obtained over the two years have been categorical. It would be worthwhile to investigate further the longer term effects of Sesame Street, and since the show continues to change, to monitor the effects of the changes. But, in general, beneficial effects accruing from viewing the show now seem quite clear.

The future will doubtless see more shows on television along the lines of Sesame Street addressed to other age groups. It will also doubtless see other research and evaluation efforts on the effects of the television medium generally and on the effects of specific educational series. We look forward to this future, for the potential value of public television has been demonstrated by Sesame Street.

APPENDIX A

A SUMMARY OF THE MAJOR FINDINGS
IN
"THE FIRST YEAR OF SESAME STREET: AN EVALUATION"

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BACKGROUND

In the summer of 1968, the Children's Television Workshop (CTW) began planning its Sesame Street program. All concerned recognized that the plans should provide for an independent evaluation of the program's impact. CTW asked Educational Testing Service (ETS) -- a nonprofit educational measurement and research organization in Princeton, New Jersey -- to conduct an evaluation to determine the extent to which Sesame Street accomplished its stated objectives during its first year on television.

Among the questions the research tried to answer are these:

> What, overall, is the impact of Sesame Street?
>
> What are the moderating effects of age, sex, prior achievement level, and socioeconomic status (SES) on the impact of Sesame Street?
>
> Do children at home watching Sesame Street benefit in comparison with children at home who do not watch it?
>
> Do children in preschool classrooms benefit from watching Sesame Street as part of their school curriculum?
>
> Do children from Spanish-speaking homes benefit from Sesame Street?
>
> What are the effects of home background conditions on the impact of Sesame Street?

The Children's Television Workshop's innovative educational program received substantial support from both public and private agencies. The original agencies included the Carnegie Corporation of New York, the Ford Foundation, the National Center for Educational Research and Development in the U.S. Office of Education, the U.S. Office of Economic Opportunity, and the National Institute of Child Health and Human Development. Other agencies that subsequently provided support included the Corporation for Public Broadcasting, the National Foundation of Arts and Humanities, and the John & Mary R. Markle Foundation.

The results of ETS's research study are described in detail in the report entitled "THE FIRST YEAR OF SESAME STREET: AN EVALUATION." This Summary brings together a few of the major findings in the full report.

HIGHLIGHTS OF THE FINDINGS

In its first season of 26 weeks, Sesame Street showed that television can be an effective medium for teaching 3-to-5-year-old children important simple facts and skills, such as recognizing and labeling letters and numerals, and more complex higher cognitive skills, such as classifying and sorting by a variety of criteria. The ETS research results reveal that Sesame Street benefits children from disadvantaged inner-city communities, middle class suburbs, and isolated rural areas -- all the groups studied in this evaluation.

The potential of educational television as a teaching medium is suggested by three primary findings of the research:

First, children who watched the most learned the most. The amount of learning that took place -- that is, the gains a child showed between being tested for certain skills before watching Sesame Street and being tested for the same skills after -- increased in relation to the amount of time the child watched the program.

Second, the skills that received the most time and attention on the program itself were, with rare exceptions, the skills that were best learned. An analysis of the content of the show revealed, for example, that more time (13.9 percent) was devoted to letter-related skills than to any other single subject; it was in the areas of letters and numbers that the children's gains were the most dramatic. In addition to acquiring skills that were directly and deliberately taught, it appears that there was some transfer of learning, that some children learned to do things -- such as recognize full words or write their own names -- which were not taught on the program.

Third, the program did not require formal adult supervision in order for children to learn in the areas the program covers. Children viewing Sesame Street at home showed gains as great as, and in some cases greater than, children who watched in school under the supervision of a teacher. This finding has special significance in light of the fact that more than four-fifths of all children 3 and 4 years of age do not attend any kind of school, and more than a quarter of all 5-year-olds do not.

The major finding -- that children learned more the more they watch -- holds true across age, sex, geographical location, socioeconomic status (SES), mental age (intelligence), and whether children watched at home or at school. In all eight goal areas in which the children were tested, gains in learning increased steadily with amount of viewing. Gains were greater on certain tests and subtests, however, and some groups of children showed greater gains than others.

The 3-year-old children gained the most; 5-year-olds gained the least. That is, 3-year-old children who viewed the show a great deal had higher attainments at posttest than those 4- and 5-year-olds who viewed the show less, even though the younger children scored lower at pretest than the older children. This finding has important implications for education in general, for it suggests that 3-year-old children are able to learn many skills that have traditionally been introduced at later ages.

A similar phenomenon appeared with advantaged and disadvantaged children. Although the disadvantaged children started out with considerably lower achievement scores on the skills being taught, those who watched a great deal surpassed the middle class children who watched only a little. It thus appears that such television programs can reduce the distinct educational gap that usually separates advantaged and disadvantaged children even by the time they enter first grade.

An extremely provocative, although highly tentative, finding suggests that Sesame Street may be particularly effective for teaching some skills to children whose first language is not English and who do not test well or perform well in school. A very small sample of children from Spanish-speaking homes in the Southwest made more spectacular gains than any other subgroup of children.

Sesame Street was more successful in promoting certain of its educational goals than others. The research suggests why, and provides clues for improving the programming. It appears that in some cases the relative lack of success resulted from an initial underestimation of children's prior knowledge and skills, and in other cases from an initial overstatement of prior knowledge. It was also found that learning was greater when skills were presented in direct fashion (as letters were) rather than indirectly (as initial sounds were).

THE SAMPLE AND THE TESTS

Approximately 1,200 children were originally selected from five different locales: Boston, Massachusetts; Durham, North Carolina; Philadelphia, Pennsylvania; Phoenix, Arizona; and a rural area in the Northeastern part of California. The sample, which finally numbered 943, included disadvantaged children from the inner city, advantaged children from suburban areas, children from rural areas, and disadvantaged Spanish-speaking children. Overall, the research sample included more boys than girls and more lower class than middle class children. More of the disadvantaged were black than white; most of the children were 4 years old, although some were 3 and some were 5; and more of the sample's children viewed Sesame Street at home than at school.

The producers of Sesame Street established specific educational goals for the program. Measurement instruments, all developed by ETS specifically for this evaluation, were used to assess progress toward those goals and "transfer of learning" effects. The eight major tests and their subtests were:

- BODY PARTS TEST
  - Pointing to Body Parts
  - Naming Body Parts
  - Function of Body Parts (Point)
  - Function of Body Parts (Verbal)
- LETTERS TEST
  - Recognizing Letters
  - Naming Capital Letters
  - Naming Lower Case Letters
  - Matching Letters in Words
  - Recognizing Letters in Words
  - Initial Sounds
  - Reading Words
- FORMS TEST
  - Recognizing Forms
  - Naming Forms
- NUMBERS TEST
  - Recognizing Numbers
  - Naming Numbers
  - Numerosity (See sample Item 2.)
  - Counting
  - Addition and Subtraction
  - (Matching Subtest for letters, numbers, and forms)
- RELATIONAL TERMS TEST
  - Amount Relationships
  - Size Relationships
  - Position Relationships (See sample Item 5.)
- SORTING SKILLS TEST
- CLASSIFICATION SKILLS TEST (See sample Item 6.)
  - Classification by Size
  - Classification by Form
  - Classification by Number
  - Classification by Function
- PUZZLES TEST

All of the tests followed the same basic format. The test materials were simple and were administered to the children individually by a trained adult from the child's neighborhood. Information was also collected on each child's home background and on how much he watched Sesame Street during the season.

The group of 943 children was divided into quartiles according to how much they had watched Sesame Street during the course of the study. All subsequent analyses were based on these quartiles. They ranged from Q1, in which children watched Sesame Street rarely or never, through Q4, in which children watched the program an average of more than five times a week. (Sesame Street was so popular that there were few true nonviewers; many children in Q1 watched the program occasionally.)

OVERALL RESULTS

For the sample as a whole, children in the highest viewing quartiles performed better on all the tests than children in the lowest quartiles. Children who watched the most (Q4) had the highest pretest scores (that is, they started out ahead), had the highest posttest scores, and gained the most from pretest to posttest. The general tendency -- to gain more with more viewing -- was greater on some tests than on others, however. It was especially pronounced on the Letters, Numbers, and Classification tests; it was least marked on the Body Parts Test.

DISADVANTAGED CHILDREN

Of the total sample of 943 children, 731 were considered to be from disadvantaged backgrounds. For them as for the total group, gain scores increased in relation to the amount they viewed Sesame Street.

In terms of the grand total score for the 203 test items common to both pretest and posttest, Q1 children gained 19 points, Q2 children gained 29 points, Q3 children gained 38 points, and Q4 children gained 47 points. (See Table 11 and Figure 2a.) Some of the gains made by Q1 children are assumed to be largely a function of maturation, since many of them never watched the show. However, the greater gains of children in other quartiles are largely a function of their viewing frequency. The same sort of relationship was observed among the separate totals for all of the eight major tests. The greatest gains were in the Letters, Numbers, and Classification tests. (See Table 11 and Figures 2b, 2c, 2d, and 2e.)

Complex statistical analyses were conducted to determine whether the observed differences could have occurred by chance, were significantly affected by other factors, or were -- as they appeared to be -- largely a function of amount of viewing. (See full report for description of statistical techniques used.) Amount of viewing proved to be by far the most important variable -- that is, its effect was equally felt irrespective of sex and whether the children watched at home or at school.

In order to isolate sharply the effect of amount of viewing, two matched groups of children were the subjects of a special study (the Age Cohorts Study). Group 1 was 53 to 58 months of age at the time of pretesting; Group 2 was 53 to 58 months of age at the time of posttesting. In addition to being of the same chronological age at the point of comparison, they were of comparable mental age and they lived in the same communities. There were, in short, no observable differences between the two groups in important matters of previous attainments, IQ, and home background. There were more than 100 disadvantaged children, who were not attending school, in each group.

The pretest scores of Group 1 (before the children could have watched Sesame Street) were compared with the posttest scores of Group 2 after the Group 2 children had watched the program. The frequent viewers in Group 2 -- children in Q3 and Q4 -- scored about 40 points higher on the 203 common items than the comparable children in Group 1 who had never watched the show. (See Table 45 and Figure 10a.) Equally significant is the fact that infrequent viewers (Q1) in Group 2 differed by only about 12 points from comparable children in Group 1 who had not viewed Sesame Street at all. In short, holding maturational effects, IQ, previous attainments, and home background constant, the frequent viewers made large and important gains.

Although the amount of viewing did not vary markedly according to age of the children, test scores did. At the time of the pretest, as would be predicted, 3-year-olds did less well than 4-year-olds, and 4-year-olds did less well than 5-year-olds. In terms of gains, however, the results were reversed. Although the most-frequent-viewing 3-year-old group started out, at pretest, lower than any 5-year-old group, by the time of the posttest the 3-year-olds who viewed most frequently scored higher on the average than 4-year-olds in Q1, Q2, and Q3, and higher than 5-year-olds in Q1 and Q2. Even 3-year-olds who viewed only two or three times a week gained a great deal compared with other age groups. (See Tables 12a, 12b, 12c and Figure 3a.)

Some test results were clearly related to age. Among frequent viewers, the largest gains on the Body Parts Test were made by 3-year-olds; 3- and 4-year-olds gained more than 5-year-olds in Numbers; and 5-year-olds showed higher gains than the others in Reading Words (which indicates a transfer of learning) and in Initial Sounds (which was taught indirectly on Sesame

Street). In short, goals that were indirectly taught were better learned by older viewers, and transfer of learning was more apparent among them, as would be expected. Generally, where specific knowledge and skills were taught directly, young children gained more than the others.

ADVANTAGED CHILDREN

There were 169 children in the study who were considered to be advantaged. They scored higher on the pretest than other groups, and they watched more of the show, on the average, than any of the groups of disadvantaged children. Relatively small amounts of viewing produced relatively large gains among these children. (See Table 24 and Figure 7a.)

SPANISH-SPEAKING CHILDREN

There were only 43 Spanish-speaking children included in the study, and there was considerable variation among them in the extent to which they had been exposed to English before watching Sesame Street. Owing to this variability and the small size of the sample, conclusions must be drawn with great caution.

The largest concentration of Spanish-speaking children was in Q1, leaving only 18 in frequent-viewing groups. These frequent-viewing children gained almost incredible amounts; in fact, the gains among Q3 Spanish-speaking children were as high as those for Q4 children in the rest of the study. In the Letters Test, the Q4 Spanish-speaking children started lowest at pretest and scored highest at posttest. Other Letters subtests, and tests of Numbers, Forms, Sorting, Relational Terms, and Classification, showed the same phenomenon: a low start with subsequent very high gains for the children who viewed most.

RURAL CHILDREN

The rural children in the study scored relatively low on pretests and made great gains with viewing. Their parents tended to be better educated than those of the disadvantaged city children. The large gains they made suggest that Sesame Street holds great promise as an educational medium for children who live on remote farms or in small villages.

SESAME STREET IN THE SCHOOLS

The teachers whose classes watched Sesame Street as a part of the study were asked to indicate their reactions to the program. Although they admired Sesame Street for its effectiveness as one means of teaching young children, they were divided in their opinions about the appropriateness of its use in the classroom. Some felt strongly that the show took up valuable time that could better be given to other activities; others felt that it was a worthwhile addition to the school day.

CHILDREN, PARENTS, AND SESAME STREET

Children who watched Sesame Street the most -- and hence learned the most -- tended to have mothers who often watched the show with them and often talked to them about it. In these same homes, the parents tended to have somewhat higher expectations for their children.

OVERALL CONCLUSION

In terms of its own stated goals, Sesame Street was in general highly successful. The ETS study shows that 3-to-5-year-old youngsters from a variety of backgrounds acquired important simple and complex cognitive skills as a result of watching the program. Those who watched the most gained the most.

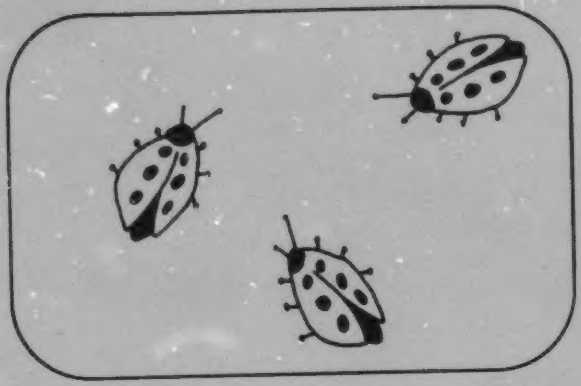
The overall conclusion is that the potential of educational television as an effective medium for teaching certain skills to very young children has been demonstrated by Sesame Street.

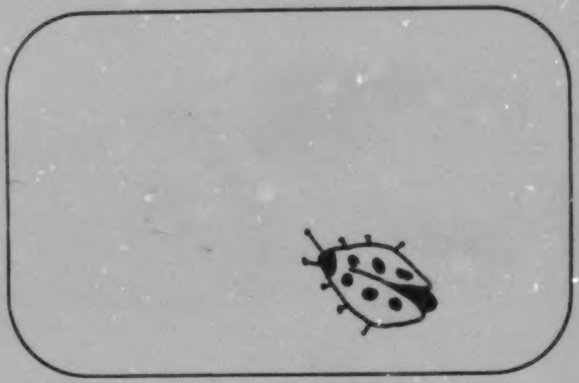
. . . .

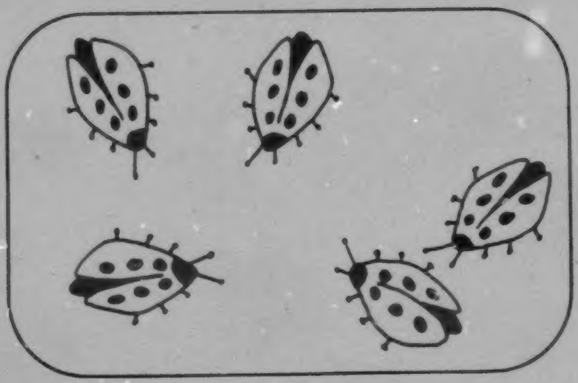
Note: The sample test items, tables, and figures referred to in this Summary appear on the following pages. They are also in the full report, which contains many more tables and figures.

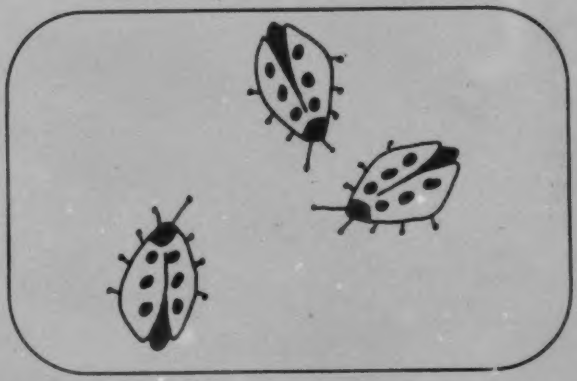
Item 2

Look at the ladybugs here, here, here, and here. Which box has five ladybugs?



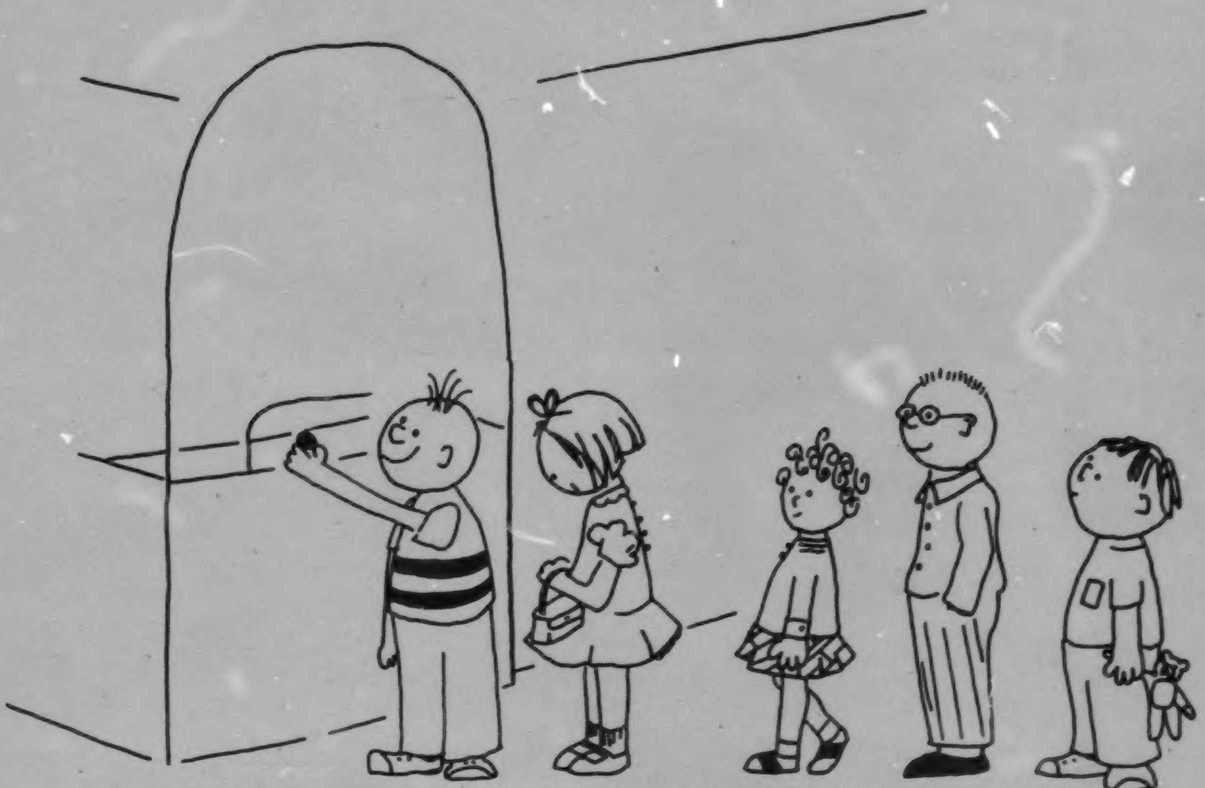






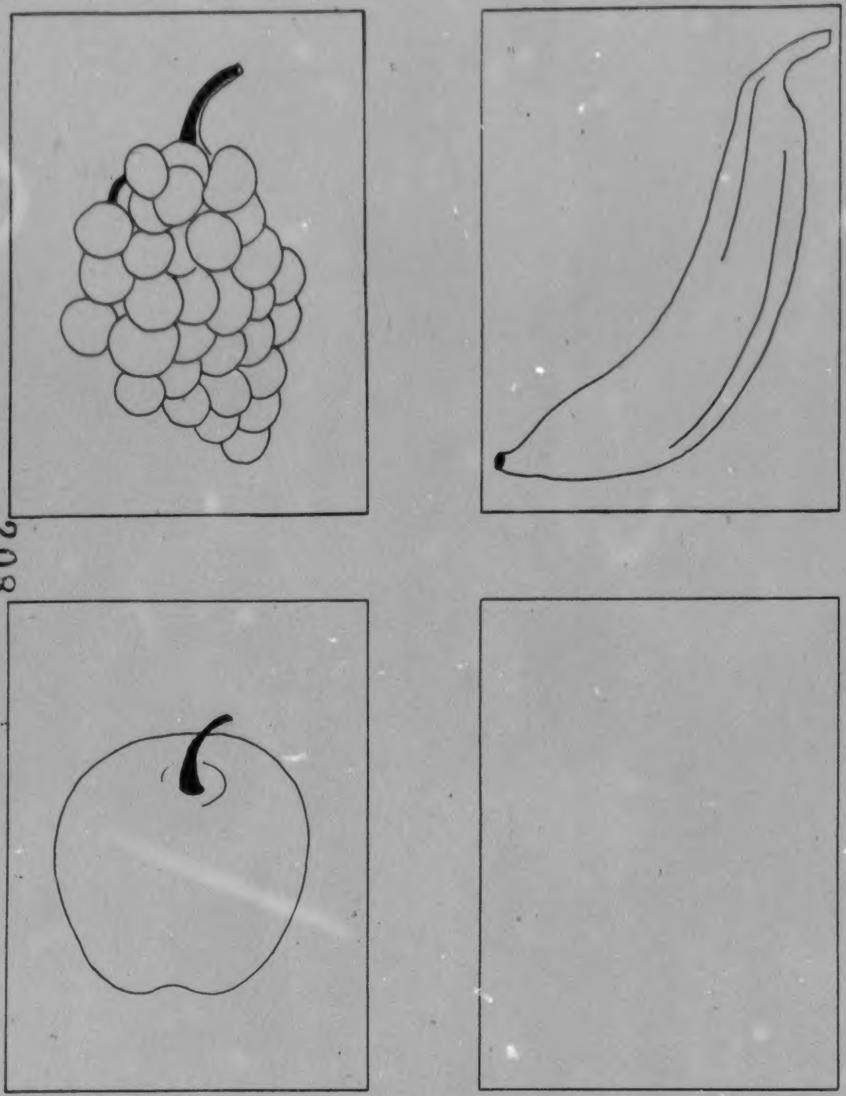
Item 5

Here are children in line. They are waiting to go to a movie. Which one is last in line?

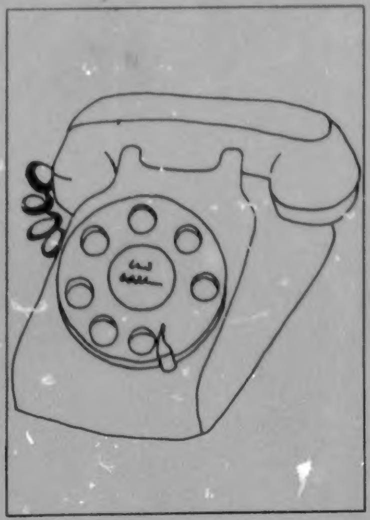


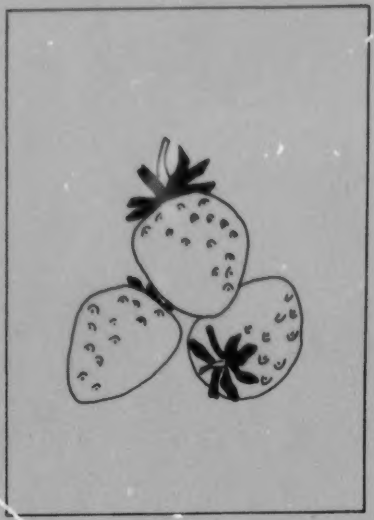
Item 6

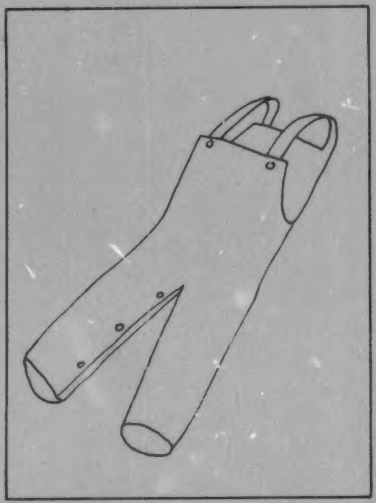
This is a picture of grapes, a banana, and an apple. One picture is missing. Let's find the one that goes here.



Here's a telephone, strawberries, pants, and a book. Which one belongs (goes) with the grapes, banana, and apple?







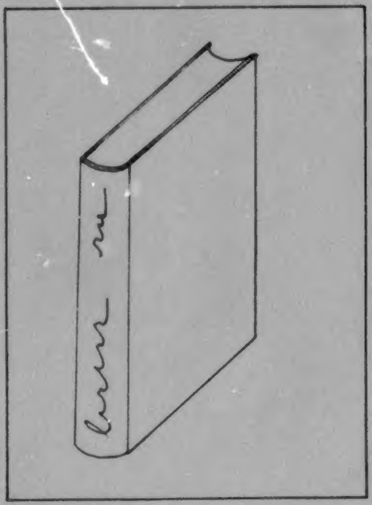


TABLE 11

Pretest and Gain Scores for All Disadvantaged Children

(by quartiles)

N = 731

Test & Subtest	Maximum Possible Score	Q_1 N=198				Q_2 N=197				Q_3 N=172				Q_4 N=164			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	75.62	24.73	18.63	20.04	84.42	27.60	29.11	22.51	87.74	27.63	37.97	25.29	97.54	32.16	47.36	26.15
Body Parts Total	32	18.11	6.51	3.88	5.71	20.00	6.35	4.38	5.50	21.09	6.04	4.74	5.31	22.47	6.05	5.24	4.88
Pointing to Body Parts	5	3.07	1.40	0.71	1.38	3.51	1.34	0.59	1.21	3.69	1.15	0.51	1.22	3.88	1.14	0.69	1.05
Naming Body Parts	15	8.24	2.92	1.36	2.67	9.28	2.95	1.40	2.69	9.70	2.53	1.68	2.49	10.37	2.44	1.79	2.27
Function of Body Parts(Point)	8	4.77	2.39	1.10	2.64	4.94	2.29	1.53	2.31	5.34	2.13	1.56	2.17	5.48	2.30	-1.87	2.06
Function of Body Parts(Verbal)	4	2.03	1.55	0.72	1.72	2.27	1.43	0.85	1.53	2.35	1.54	0.99	1.53	2.74	1.48	0.89	1.35
Letters Total	58	13.07	5.95	4.30	7.43	14.42	7.37	8.22	9.26	14.95	7.00	11.89	11.00	17.98	10.12	15.97	11.19
Recognizing Letters	8	2.26	1.67	0.65	2.31	2.38	1.89	1.37	2.41	2.50	1.84	2.06	2.55	3.04	2.12	2.56	2.62
Naming Capital Letters	16	1.24	2.36	1.35	3.44	1.47	3.25	3.31	4.90	1.49	3.02	5.17	5.15	2.85	4.53	7.25	5.64
Naming Lower Case Letters	8	0.47	1.06	0.37	1.63	0.63	1.42	1.02	2.30	0.44	1.09	1.91	2.42	1.00	1.89	2.60	2.68
Matching Letters in Words	4	2.81	1.21	0.65	1.21	3.03	1.22	0.72	1.18	3.13	1.16	0.67	1.08	3.24	1.07	0.65	1.11
Recognizing Letters in Words	4	1.34	1.11	0.31	1.40	1.36	1.07	0.58	1.38	1.35	1.08	0.82	1.55	1.49	1.20	1.16	1.53
Initial Sounds	4	0.68	0.74	0.14	1.08	0.80	0.76	0.19	1.16	0.94	0.81	0.15	1.21	0.89	0.81	0.30	1.16
Reading Words	6	0.02	0.16	0.02	0.28	0.06	0.49	0.05	0.55	0.03	0.20	0.18	0.60	0.12	0.59	0.37	0.75
Forms Total	20	8.43	3.50	2.29	3.77	9.89	4.01	3.15	4.05	10.04	3.64	4.29	4.07	10.64	3.50	5.49	3.52
Recognizing Forms	4	1.96	1.20	0.41	1.64	2.16	1.20	0.38	1.62	2.12	1.26	0.69	1.72	2.13	1.15	1.10	1.52
Naming Forms	4	0.87	1.08	0.64	1.29	1.34	1.31	0.86	1.43	1.29	1.22	1.28	1.43	1.39	1.27	1.83	1.34
Numbers Total	54	16.18	8.20	5.43	7.05	18.56	9.38	8.52	8.23	19.64	10.10	10.88	9.51	23.69	11.15	13.01	9.52
Recognizing Numbers	6	1.64	1.40	0.60	1.71	1.76	1.52	1.26	1.91	1.77	1.52	1.67	2.10	2.38	1.87	1.78	2.11
Naming Numbers	15	1.12	2.58	1.13	2.96	1.57	2.95	2.43	3.96	1.56	3.07	3.74	4.01	3.09	4.04	5.15	4.44
Numerosity	6	2.93	1.50	0.92	1.68	3.47	1.72	0.92	1.69	3.59	1.72	0.97	1.79	4.05	1.72	1.11	1.56
Counting	9	4.35	2.51	1.24	2.34	4.74	2.62	1.81	2.38	5.22	2.56	1.79	2.53	5.72	2.50	1.74	2.41
Addition and Subtraction	7	1.30	1.29	0.64	1.56	1.64	1.61	0.72	1.53	1.93	1.78	0.76	1.84	2.13	1.82	1.04	1.79
Matching Subtest	11	7.83	2.76	1.26	2.87	8.38	2.55	1.50	2.50	8.90	2.19	1.12	2.09	9.32	1.77	1.02	1.82
Relational Terms Total	17	9.07	2.98	1.11	3.18	9.88	3.06	1.52	3.34	10.08	2.77	1.80	2.93	10.15	3.13	2.47	3.34
Amount Relationships	9	4.37	1.73	0.63	2.04	4.52	1.99	0.93	2.34	4.64	1.90	1.00	2.21	4.73	1.95	1.23	2.22
Size Relationships	2	1.64	0.58	0.09	0.70	1.75	0.46	0.13	0.54	1.73	0.49	0.19	0.51	1.73	0.46	0.18	0.51
Position Relationships	5	2.69	1.46	0.27	1.68	3.10	1.34	0.39	1.63	3.19	1.28	0.52	1.39	3.24	1.33	0.80	1.50
Sorting Total	6	2.30	1.33	0.47	1.85	2.54	1.44	0.81	1.82	2.52	1.50	1.38	1.76	2.73	1.39	1.64	1.71
Classification Total	24	10.57	4.15	1.67	4.41	11.98	4.63	2.96	4.78	12.06	4.68	4.56	4.97	12.88	4.60	5.32	4.67
Classification by Size	2	1.08	0.74	0.08	1.03	1.10	0.78	0.27	0.95	1.13	0.78	0.32	0.92	1.20	0.74	0.43	0.85
Classification by Form	6	1.98	1.26	0.51	1.53	2.45	1.48	0.87	1.70	2.53	1.44	1.22	1.84	2.69	1.45	1.48	1.58
Classification bv Number	6	1.87	1.29	0.49	1.65	2.26	1.31	0.48	1.78	2.28	1.47	1.00	1.82	2.64	1.52	1.11	1.85
Classification by Function	9	5.19	1.95	0.75	2.27	5.65	2.04	1.34	2.20	5.63	1.94	1.90	2.17	5.88	1.91	2.02	1.95
Puzzles Total	5	1.88	1.40	0.43	1.86	2.04	1.37	0.80	1.64	2.15	1.28	0.83	1.58	2.41	1.45	0.98	1.57

Figure 2a
Pretest and Gain on Total Test Score for All Disadvantaged Children
(by viewing quartiles)
N=731

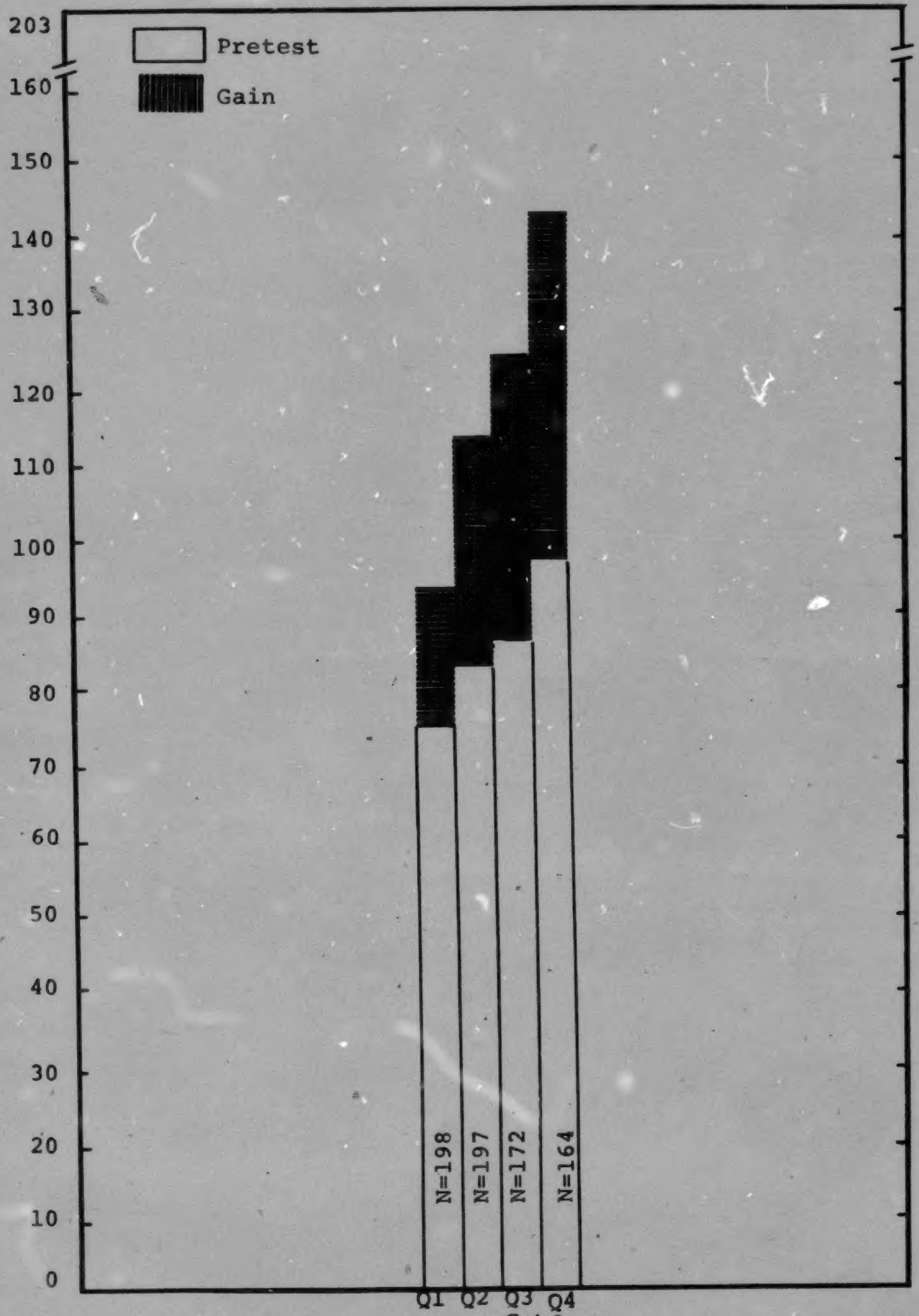


FIGURE 2b

Selected Pretest and Gain Scores for All Disadvantaged Children

(by viewing quartiles) Q1=198 Q2=197 Q3=172 Q4=164
Dashed lines beneath test titles indicate maximum possible scores.

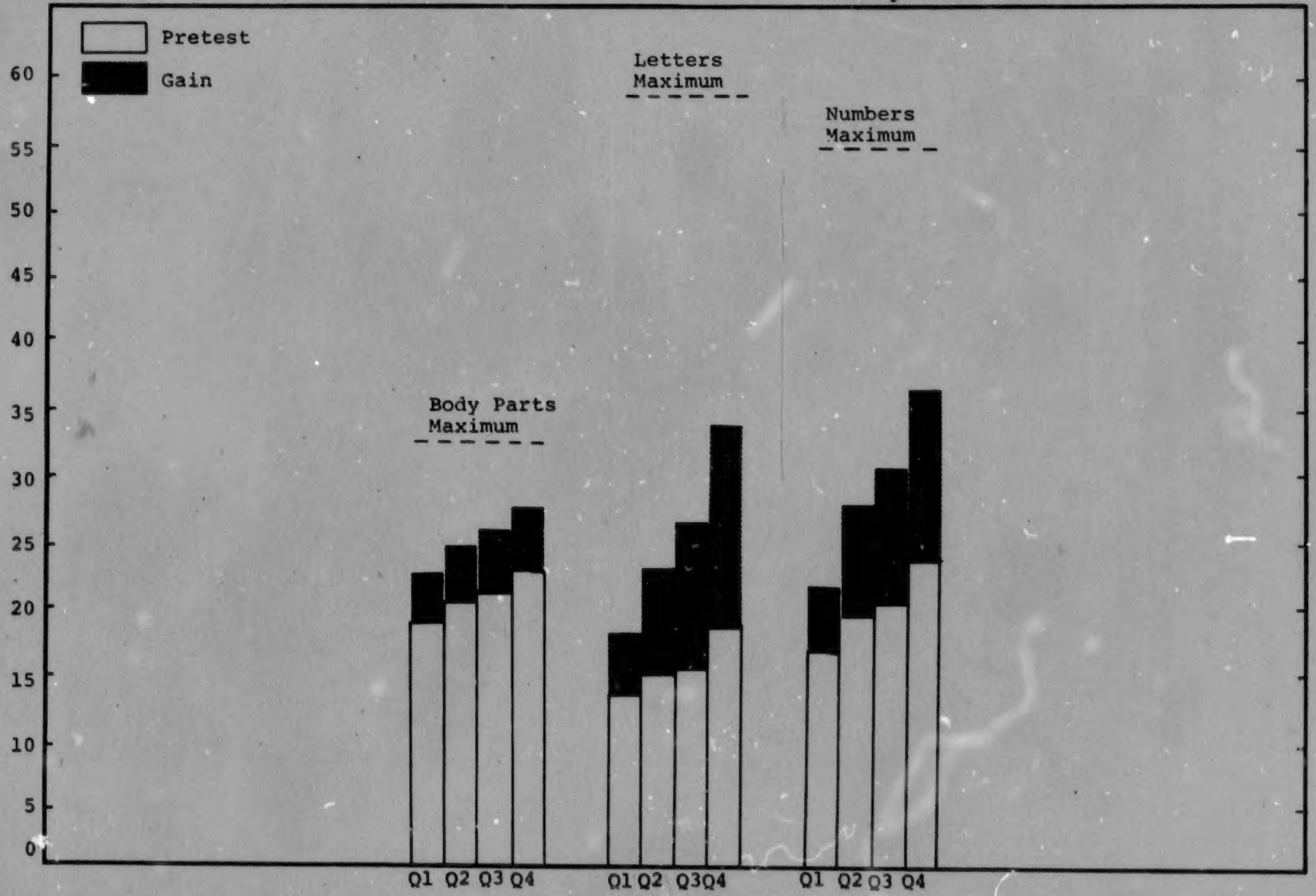


FIGURE 2c

Selected Pretest and Gain Scores for All Disadvantaged Children

(by viewing quartiles) Q1=198 Q2=197 Q3=172 Q4=164

Dashed lines beneath test titles indicate maximum possible scores.

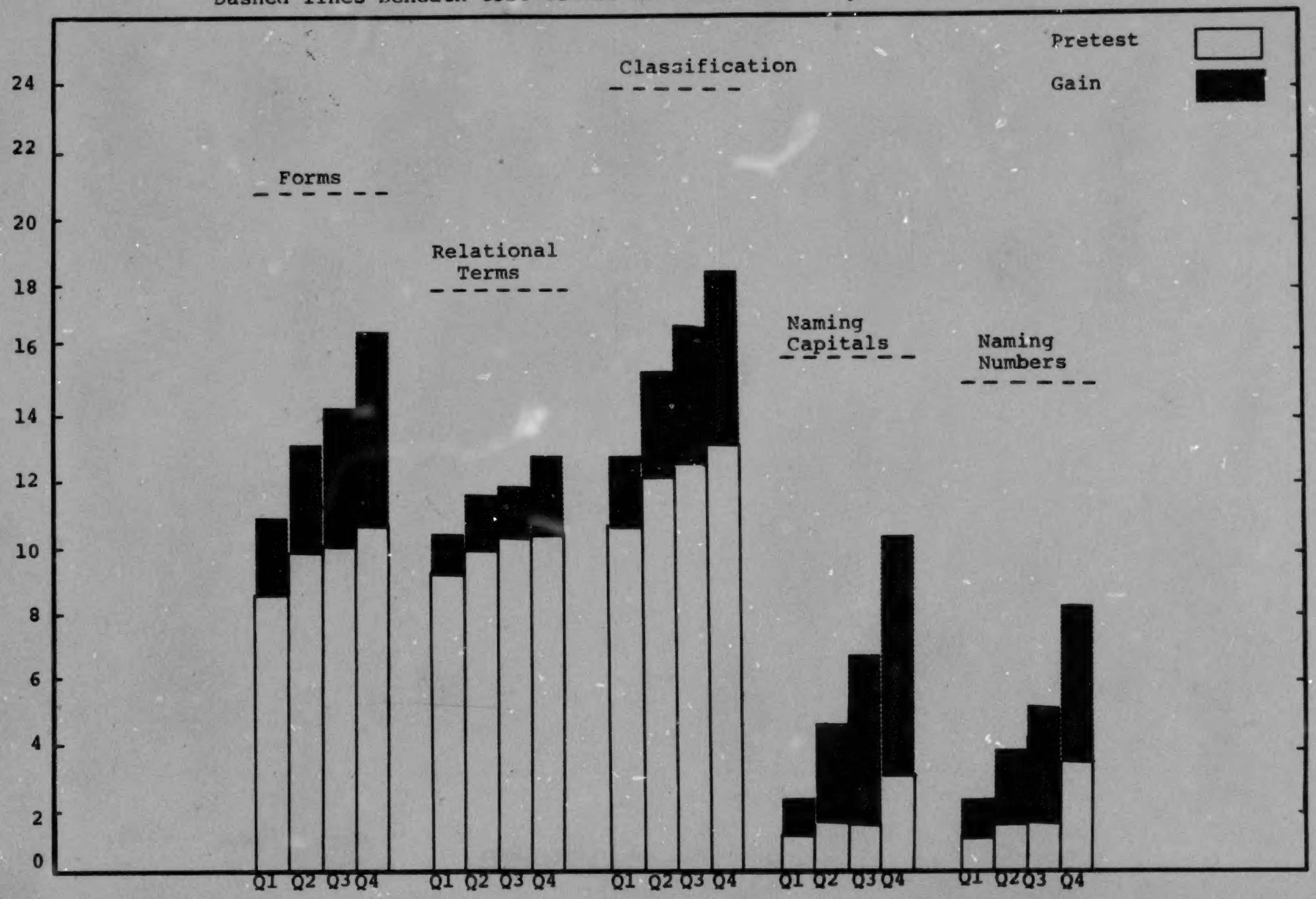


FIGURE 2d

Selected Pretest and Gain Scores for All Disadvantaged Children
(by viewing quartiles) Q1=198 Q2=197 Q3=172 Q4=164

Dashed lines beneath test titles indicate maximum possible scores.

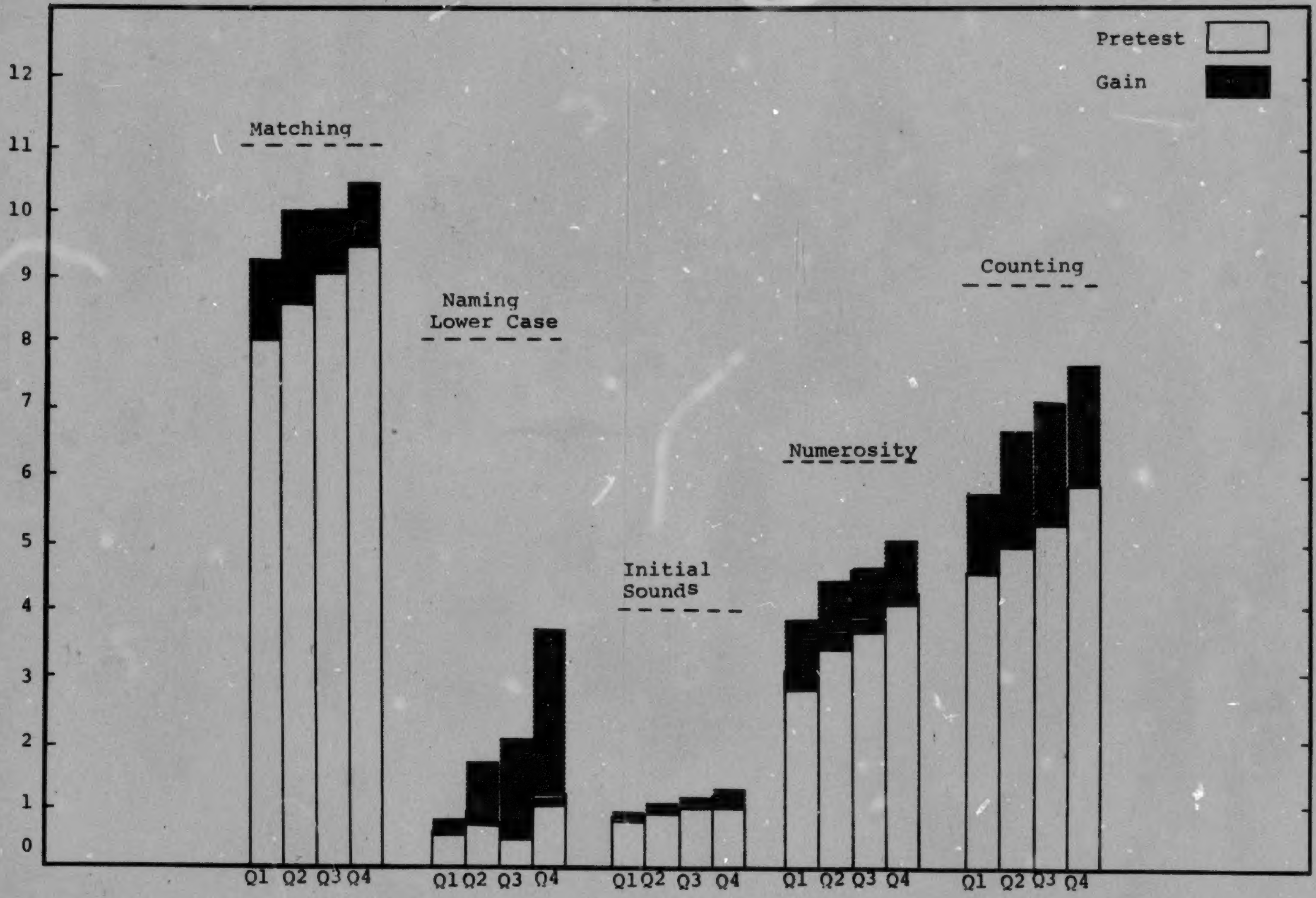


FIGURE 2e

Selected Pretest and Gain Scores for All Disadvantaged Children
(by viewing quartiles) Q1=198 Q2=197 Q3=172 Q4=164
Dashed lines beneath test titles indicate maximum possible scores

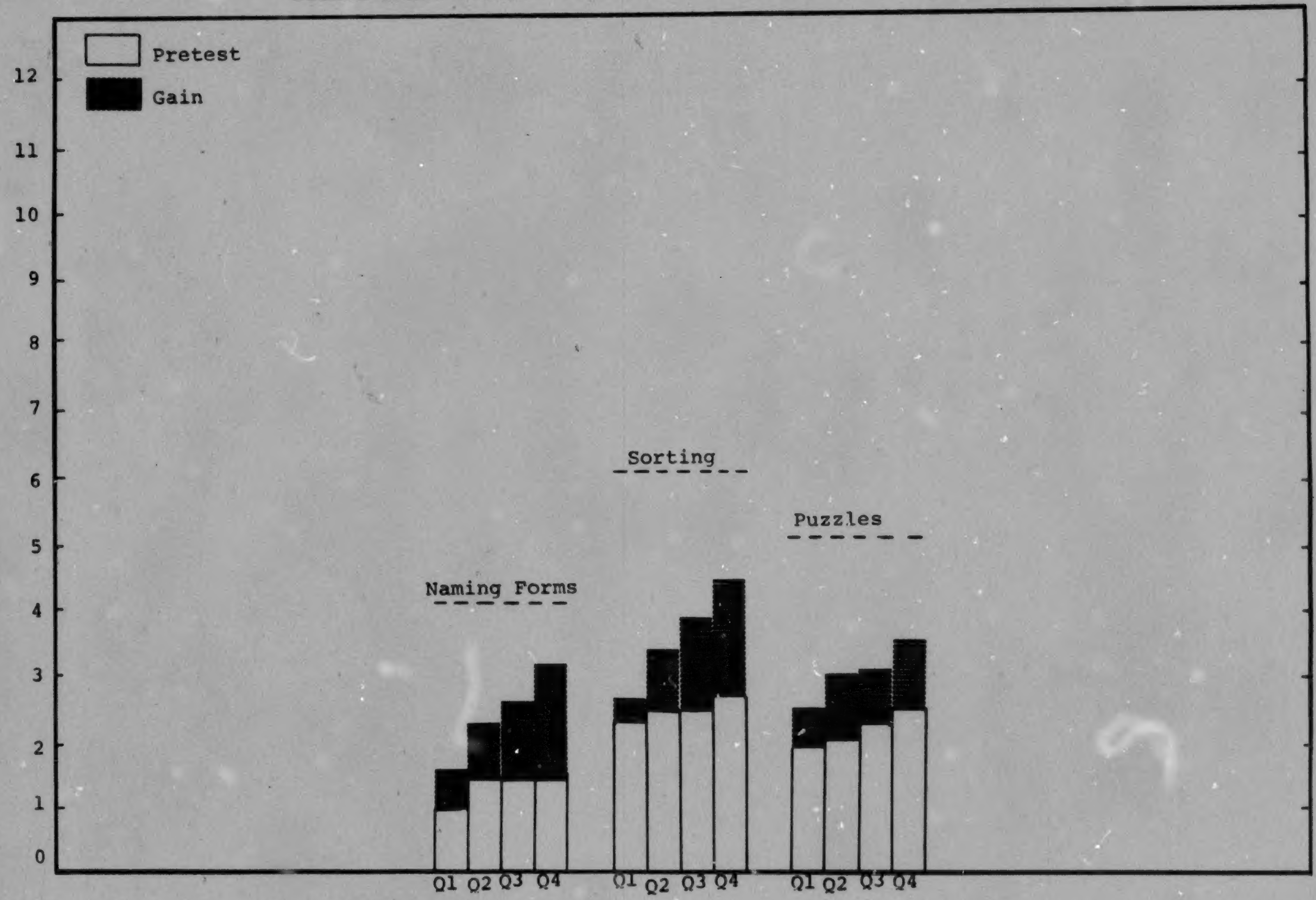


TABLE 45

Pretest and Posttest Scores for Disadvantaged, At-Home Children (by viewing quartiles)

Group 1 = children who were 53-58 months old at time of pretest
Group 2 = children who were 53-58 months old at time of posttest
(Age cohorts)

Test & Subtest	Maximum Possible Score	Q1 Group 1 N=31 Pretest Mean	Q1 Group 1 N=31 Pretest SD	Q1 Group 2 N=26 Posttest Mean	Q1 Group 2 N=26 Posttest SD	Q2 Group 1 N=33 Pretest Mean	Q2 Group 1 N=33 Pretest SD	Q2 Group 2 N=33 Posttest Mean	Q2 Group 2 N=33 Posttest SD	Q3 Group 1 N=27 Pretest Mean	Q3 Group 1 N=27 Pretest SD	Q3 Group 2 N=18 Posttest Mean	Q3 Group 2 N=18 Posttest SD	Q4 Group 1 N=23 Pretest Mean	Q4 Group 1 N=23 Pretest SD	Q4 Group 2 N=24 Posttest Mean	Q4 Group 2 N=24 Posttest SD
Grand Total	203	76.77	22.27	88.42	21.83	81.97	18.90	101.70	24.78	90.37	25.21	130.33	29.59	99.04	36.42	139.33	35.99
Body Parts Total	32	17.87	6.49	21.04	6.01	20.24	5.74	22.91	5.84	21.93	5.57	26.83	3.73	22.87	5.51	26.75	4.58
Pointing to Body Parts	5	3.13	1.50	3.31	1.46	3.91	1.04	3.88	1.08	3.78	0.97	4.39	0.78	4.17	1.15	4.42	0.93
Naming Body Parts	15	8.58	2.85	9.15	2.69	9.39	3.29	9.97	2.58	10.22	2.41	11.67	2.14	10.43	2.37	11.50	2.38
Function of Body Parts (Point)	8	4.03	2.37	5.77	2.16	4.55	2.12	6.15	2.05	5.52	1.83	7.17	1.15	5.48	2.31	7.29	1.20
Function of Body Parts (Verbal)	4	2.13	1.48	2.81	1.41	2.39	1.22	2.91	1.42	2.41	1.55	3.61	0.61	2.78	1.35	3.54	0.93
Letters Total	58	14.06	6.45	14.65	3.91	13.09	3.65	18.24	6.82	14.81	5.90	26.83	11.89	18.52	11.33	31.92	14.18
Recognizing Letters	8	2.00	1.46	2.31	1.52	2.42	1.64	3.21	1.76	2.37	1.62	4.72	2.59	2.91	2.09	4.96	2.65
Naming Capital Letters	16	1.32	2.99	0.85	1.08	0.67	1.34	2.24	3.36	0.96	2.16	6.22	5.16	3.17	5.37	9.29	5.80
Naming Lower Case Letters	8	0.77	1.50	0.54	0.76	0.27	0.45	0.64	1.11	0.44	1.09	2.33	2.45	0.96	2.18	3.17	2.90
Matching Letters in Words	4	2.97	1.17	3.38	1.02	2.88	1.17	3.82	0.39	3.48	0.89	4.00	0.00	3.52	0.79	3.83	0.64
Recognizing Letters in Words	4	1.74	1.18	1.77	0.99	1.33	0.99	1.52	1.06	1.56	1.12	2.17	1.38	1.57	1.20	2.54	1.38
Initial Sounds	4	0.90	0.87	0.81	0.75	0.73	0.63	1.00	0.90	0.89	0.64	1.00	1.14	1.00	0.67	1.25	0.74
Reading Words	6	0.00	0.00	0.00	0.00	0.03	0.17	0.00	0.00	0.00	0.00	0.11	0.32	0.17	0.83	0.54	1.36
Forms Total	20	7.45	3.36	11.04	3.43	9.09	3.21	11.21	3.27	9.93	4.08	14.22	3.61	10.35	4.21	15.46	3.91
Recognizing Forms	4	1.68	1.30	2.77	1.21	2.27	1.28	2.06	1.27	2.00	1.11	2.72	1.45	1.63	1.30	3.25	1.15
Naming Forms	4	0.42	0.50	1.46	1.14	0.88	0.89	1.48	1.25	1.04	1.13	2.44	1.42	1.26	1.39	3.04	1.04
Numbers Total	54	16.77	7.06	19.00	7.64	17.97	7.10	23.76	9.63	20.37	9.42	32.67	10.67	23.96	12.42	35.54	11.77
Recognizing Numbers	6	1.71	1.37	2.00	1.33	2.03	1.49	2.33	1.74	1.96	1.51	2.83	1.69	2.57	1.88	4.13	1.75
Naming Numbers	15	1.06	2.86	1.04	2.65	1.00	1.84	2.58	3.40	1.26	2.92	5.72	4.57	3.91	4.35	7.58	5.06
Numerosity	6	3.39	1.20	3.46	1.58	3.58	1.58	4.06	1.60	3.74	1.83	5.11	0.90	4.04	1.77	4.96	1.30
Counting	9	4.32	2.40	5.19	2.04	4.85	2.25	5.97	2.26	5.63	2.54	7.00	1.97	5.43	2.83	7.38	1.79
Addition and Subtraction	7	1.29	1.24	1.62	1.47	1.52	1.33	2.30	1.69	1.89	1.22	2.94	1.55	2.04	1.89	3.17	1.69
Matching Subtest	11	7.97	2.93	9.31	1.85	8.45	1.99	9.97	1.16	8.78	2.28	10.33	0.59	9.17	1.67	10.00	1.50
Relational Terms Total	17	9.61	2.35	10.65	2.78	10.33	2.98	11.30	2.27	10.81	2.32	12.39	2.48	10.26	3.77	18.00	2.52
Amount Relationships	9	4.65	1.64	5.27	1.54	5.09	1.74	5.61	1.58	5.37	1.39	6.11	1.41	5.17	2.10	5.58	1.67
Size Relationships	2	1.65	0.55	1.81	0.40	1.67	0.54	1.79	0.42	1.85	0.46	2.00	0.00	1.52	0.51	1.83	0.38
Position Relationships	5	3.00	1.39	3.12	1.37	3.09	1.33	3.39	1.14	2.96	1.34	3.61	1.29	3.09	1.50	3.92	1.21
Sorting Total	6	2.13	1.38	2.69	1.41	1.67	1.29	3.33	1.49	2.81	1.55	4.28	1.32	2.30	1.22	4.54	1.25
Classification Total	24	10.71	3.84	11.96	4.25	11.03	2.91	13.79	4.25	12.89	4.50	17.78	4.10	13.04	5.06	17.75	5.14
Classification by Size	2	1.19	0.79	0.96	0.77	0.97	0.73	1.27	0.57	1.26	0.71	1.44	0.70	1.17	0.65	1.46	0.83
Classification by Form	6	1.77	1.38	2.50	1.27	2.06	1.12	2.88	1.22	2.70	1.61	3.61	1.42	2.78	1.81	4.08	1.50
Classification by Number	6	2.06	1.09	2.35	1.29	2.18	0.92	2.36	1.37	2.44	1.45	4.22	1.48	2.65	1.27	3.67	1.76
Classification by Function	9	5.29	1.47	5.81	1.81	5.45	1.50	6.76	1.97	5.93	1.73	7.78	1.44	5.91	2.21	7.79	1.82
Puzzles Total	5	2.03	1.56	2.31	0.93	2.55	1.37	2.55	1.39	2.26	1.02	3.44	1.38	2.52	1.44	2.92	1.35
Peabody IQ*	--	75.97	26.63	81.08	20.17	80.03	21.94	85.09	15.82	82.67	19.28	88.33	19.94	86.61	28.72	88.08	20.06

*Differences in IQ between Group 1 and Group 2 within each quartile are not significant.

FIGURE 10a

The Age Cohorts Study

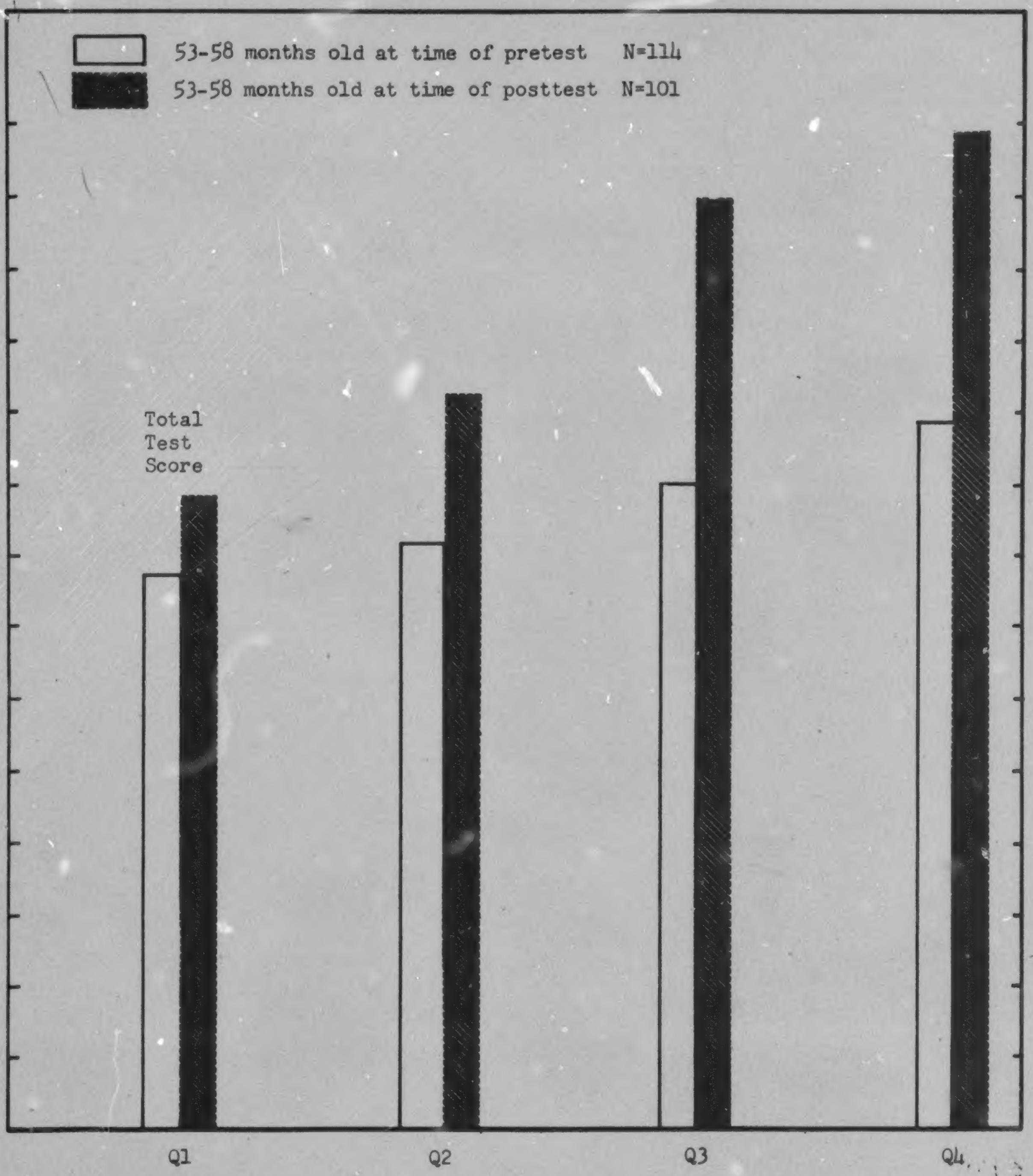


TABLE 12a

Pretest and Gain Scores for All Disadvantaged 3-Year-Old Children

(by quartiles)

N = 127

Test & Subtest	Maximum Possible Score	Q_1 N=33 Pretest Mean		Gain Mean	SD	Q_2 N=38 Pretest Mean	SD	Gain Mean	SD	Q_3 N=25 Pretest Mean	SD	Gain Mean	SD	Q_4 N=31 Pretest Mean	SD	Gain Mean	SD
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	60.76	20.34	12.42	25.67	62.42	20.82	30.71	21.14	65.48	15.76	37.20	28.28	75.81	25.14	57.23	25.66
Body Parts Total	32	13.88	5.21	3.03	6.26	15.76	5.77	4.79	5.91	16.72	5.44	6.64	6.94	18.84	6.26	8.00	5.52
Pointing to Body Parts	5	2.55	1.39	0.39	1.30	2.58	1.35	0.82	1.54	2.88	1.30	0.92	1.32	3.44	1.27	1.00	1.15
Naming Body Parts	15	6.85	2.50	1.18	2.72	7.87	3.03	1.13	2.88	8.52	2.38	1.68	3.59	9.53	2.49	2.32	2.63
Function of Body Parts(Point)	8	3.27	2.36	1.00	3.46	3.92	2.28	1.66	2.58	3.72	2.01	2.64	2.20	4.09	2.36	3.00	2.24
Function of Body Parts(Verbal)	4	1.21	1.47	0.45	2.11	1.39	1.41	1.18	1.86	1.60	1.55	1.40	1.71	1.78	1.60	1.68	1.66
Letters Total	58	10.73	5.99	3.79	9.20	10.18	4.95	7.53	8.99	11.32	3.99	10.52	9.71	11.91	6.65	20.13	12.14
Recognizing Letters	8	2.06	1.95	0.82	2.69	1.47	1.66	1.45	2.23	2.28	1.59	1.32	2.53	1.63	1.58	3.74	2.65
Naming Capital Letters	16	1.03	2.51	0.55	4.04	0.58	2.61	2.03	5.06	0.40	1.00	4.36	4.39	1.00	2.78	8.90	6.38
Naming Lower Case Letters	8	0.33	1.41	0.18	1.94	0.37	1.38	0.45	2.30	0.12	0.33	1.36	2.08	0.44	1.46	2.77	2.80
Matching Letters in Words	4	2.12	1.22	1.00	1.27	2.45	1.50	0.92	1.60	2.32	1.55	1.12	1.56	2.59	1.36	1.23	1.52
Recognizing Letters in Words	4	1.03	0.98	0.36	1.27	1.05	1.01	0.79	1.21	1.08	1.08	0.84	1.72	1.00	1.02	1.55	1.46
Initial Sounds	4	0.48	0.62	0.21	0.99	0.68	0.70	0.16	1.13	1.04	1.02	-0.16	1.21	0.81	0.82	0.03	1.14
Reading Words	6	0.06	0.35	-0.06	0.35	0.00	0.00	0.03	0.16	0.00	0.00	0.08	0.40	0.00	0.00	0.19	0.40
Forms Total	20	7.70	3.16	1.03	3.83	7.84	3.90	3.39	3.96	7.36	2.81	5.00	4.25	9.13	3.50	6.29	3.59
Recognizing Forms	4	2.24	1.09	-0.18	1.57	1.84	1.26	0.47	1.81	1.80	1.41	0.60	1.50	1.97	1.12	1.23	1.54
Naming Forms	4	0.52	1.00	0.30	1.55	0.84	1.05	1.03	1.37	0.52	0.82	1.76	1.13	1.22	1.43	2.26	1.55
Numbers Total	54	11.21	6.40	2.94	9.34	11.37	6.08	9.34	7.53	13.00	5.39	8.08	10.02	16.38	8.39	14.13	9.79
Recognizing Numbers	6	0.91	1.04	0.76	1.94	1.03	1.24	1.58	2.18	1.08	1.12	1.12	2.03	1.47	1.44	2.03	2.26
Naming Numbers	15	0.42	1.92	0.21	2.64	0.45	1.50	1.63	3.36	0.16	0.37	2.64	3.04	1.25	2.46	5.16	5.41
Numerosity	6	2.24	1.30	0.45	1.82	2.53	1.69	0.74	1.91	3.20	1.76	0.44	2.06	3.28	1.82	1.26	1.53
Counting	9	3.09	2.23	0.82	2.88	3.13	2.56	2.32	2.70	3.32	1.93	2.32	3.24	4.41	2.45	1.81	2.43
Addition and Subtraction	7	0.85	1.20	0.09	1.53	0.71	0.98	0.61	1.31	0.88	0.93	0.60	1.38	0.94	1.24	1.10	1.14
Matching Subtest	11	6.94	2.70	0.94	3.43	6.53	3.33	3.05	3.04	7.00	2.68	2.40	2.72	8.25	2.53	2.03	2.74
Relational Terms Total	17	7.42	2.46	1.39	3.55	8.45	3.13	1.79	3.46	8.24	2.62	1.76	3.44	8.72	2.39	3.23	2.70
Amount Relationships	9	3.70	1.72	0.89	2.23	3.61	2.40	1.32	2.80	3.52	1.56	1.04	2.32	3.75	1.46	1.42	1.67
Size Relationships	2	1.42	0.56	0.03	0.88	1.74	0.45	0.16	0.49	1.64	0.49	0.24	0.52	1.72	0.52	0.23	0.62
Position Relationships	5	2.03	1.42	0.24	1.90	2.76	1.50	0.13	1.79	2.80	1.35	0.24	1.59	2.88	1.31	1.23	1.54
Sorting Total	6	2.33	1.29	-0.12	1.73	2.21	1.36	0.42	1.73	2.44	1.26	0.92	1.85	2.41	1.10	1.52	1.59
Classification Total	24	8.67	3.53	1.27	3.59	8.50	4.43	4.53	4.69	9.12	3.48	4.44	4.81	10.56	4.66	5.71	3.68
Classification by Size	2	0.94	0.61	-0.18	0.81	0.50	0.60	0.68	0.96	0.68	0.75	0.44	0.92	0.97	0.78	0.39	0.88
Classification by Form	6	1.67	1.22	0.33	1.41	1.84	1.64	0.84	1.81	2.08	1.22	0.80	1.76	2.00	1.37	1.48	1.31
Classification by Number	6	1.18	1.07	0.61	1.78	1.45	0.95	0.87	1.28	1.84	1.11	0.44	1.71	2.16	1.42	1.19	1.94
Classification by Function	9	4.36	1.95	0.76	2.21	4.24	2.48	2.18	2.82	4.20	1.55	2.60	1.98	5.03	1.99	2.35	1.43
Puzzles Total	5	1.76	1.28	0.21	1.85	1.63	1.10	0.45	1.43	1.28	1.02	1.24	1.48	2.03	1.49	1.19	1.60
Peabody Raw Score (Pretest only)	80	21.09	7.53			22.42	7.77			24.68	9.38			31.84	11.14		
Peabody Mental Age (Months)	--	31.12	5.53			31.39	7.22			33.92	7.88			40.31	12.61		
Hidden Triangles Total (Posttest)	10	3.36	1.69			4.11	1.66			4.15	1.46			4.77	1.52		
Which Comes First Total (Posttest)	12	4.36	2.16			4.46	2.09			5.15	2.17			5.94	2.35		

TABLE 12b

Pretest and Gain Scores for All Disadvantaged 4-Year-Old Children

(by quartiles)

N = 433

Test & Subtest	Maximum Possible Score	Q_1 N=127				Q_2 N=119				Q_3 N=105				Q_4 N=82			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	75.13	22.21	18.24	18.40	84.09	23.25	30.60	24.35	86.63	23.64	38.50	25.44	93.79	29.50	49.01	24.62
Body Parts Total	32	18.35	6.22	4.09	5.31	20.08	6.22	4.92	5.47	21.14	5.85	4.64	5.19	22.27	5.75	5.10	4.50
Pointing to Body Parts	5	3.13	1.37	0.75	1.37	3.56	1.30	0.66	1.23	3.74	1.11	0.52	1.23	3.89	1.12	0.65	1.02
Naming Body Parts	15	8.18	2.86	1.51	2.52	9.33	2.97	1.08	2.82	9.74	2.52	1.70	2.43	10.13	2.32	1.77	2.09
Function of Body Parts (Point)	8	4.89	2.29	1.09	2.52	4.88	2.18	1.74	2.13	5.42	1.95	1.40	1.99	5.48	2.21	1.85	1.97
Function of Body Parts (Verbal)	4	2.15	1.52	0.74	1.66	2.32	1.36	0.83	1.47	2.25	1.54	1.02	1.63	2.77	1.47	0.83	1.24
Letters Total	58	13.20	5.92	3.45	6.37	13.94	6.08	8.46	9.17	14.56	5.67	12.02	11.17	17.33	8.84	15.37	10.45
Recognizing Letters	8	2.26	1.62	0.48	2.26	2.25	1.76	1.40	2.32	2.33	1.67	2.28	2.52	2.94	1.87	2.43	2.33
Naming Capital Letters	16	1.17	2.32	1.09	2.90	1.25	2.63	3.40	4.76	1.34	2.64	5.17	5.34	2.58	4.39	7.07	5.58
Naming Lower Case Letters	8	0.50	1.01	0.16	1.20	0.52	1.08	1.11	2.18	0.41	0.89	1.90	2.46	0.76	1.63	2.40	2.54
Matching Letters in Words	4	2.91	1.15	0.56	1.18	3.04	1.16	0.82	1.07	3.19	1.02	0.65	1.01	3.30	0.98	0.65	0.96
Recognizing Letters in Words	4	1.35	1.14	0.29	1.41	1.43	1.04	0.44	1.45	1.42	1.29	0.76	1.41	1.46	1.13	1.13	1.46
Initial Sounds	4	0.70	0.78	0.09	1.11	0.73	0.70	0.29	1.15	0.81	0.72	0.24	1.23	0.87	0.74	0.30	1.09
Reading Words	6	0.0	0.0	0.04	0.29	0.08	0.57	-0.02	0.61	0.03	0.17	0.07	0.37	0.07	0.56	0.30	0.78
Forms Total	20	8.21	3.42	2.55	3.82	9.87	3.67	3.31	4.40	9.94	3.59	4.32	4.13	10.38	3.39	5.63	3.72
Recognizing Forms	4	1.83	1.22	0.58	1.61	2.12	1.14	0.50	1.67	2.13	1.23	0.64	1.77	2.23	1.20	0.95	1.57
Naming Forms	4	0.88	1.05	0.77	1.24	1.36	1.30	0.86	1.60	1.35	1.24	1.17	1.42	1.24	1.23	1.94	1.30
Numbers Total	54	15.82	6.89	5.69	6.32	18.72	7.96	8.84	8.83	19.08	8.85	11.37	9.81	21.95	10.43	14.65	8.65
Recognizing Numbers	6	1.66	1.38	0.53	1.68	1.82	1.44	1.29	1.93	1.76	1.42	1.57	2.07	2.20	1.76	1.88	1.91
Naming Numbers	15	1.06	2.35	0.98	2.85	1.60	2.91	2.49	4.33	1.29	2.51	3.85	4.15	2.70	3.80	5.33	4.01
Numerosity	6	2.88	1.38	0.98	1.65	3.43	1.53	1.11	1.64	3.56	1.72	1.12	1.92	3.79	1.76	1.33	1.59
Counting	9	4.21	2.38	1.51	2.18	4.79	2.42	1.85	2.37	5.16	2.55	1.86	2.63	5.37	2.52	2.28	2.28
Addition and Subtraction	7	1.18	1.07	0.86	1.44	1.69	1.46	0.71	1.72	1.85	1.70	0.70	1.94	1.89	1.58	1.44	1.94
Matching Subtest	11	7.81	2.77	1.35	2.76	8.41	2.28	1.49	2.40	8.98	2.05	1.05	1.94	9.46	1.31	0.77	1.33
Relational Terms Total	17	8.99	2.79	1.02	3.11	9.78	2.70	1.65	3.33	9.99	2.62	1.95	3.11	9.70	3.22	2.80	3.50
Amount Relationships	9	4.26	1.62	0.59	2.06	4.48	1.68	1.03	2.25	4.65	1.82	1.09	2.26	4.39	2.01	1.52	2.47
Size Relationships	2	1.67	0.60	0.10	0.69	1.74	0.46	0.13	0.56	1.70	0.52	0.24	0.55	1.68	0.47	0.18	0.55
Position Relationships	5	2.68	1.39	0.24	1.61	3.06	1.30	0.45	1.59	3.08	1.32	0.62	1.46	3.13	1.40	0.90	1.54
Sorting Total	6	2.05	1.28	0.62	1.91	2.48	1.40	0.95	1.84	2.47	1.46	1.36	1.81	2.52	1.28	1.87	1.59
Classification Total	24	10.52	3.84	1.17	4.60	12.01	3.98	2.91	4.66	11.83	4.33	4.86	5.02	12.33	4.38	5.77	5.07
Classification by Size	2	1.06	0.77	-0.13	1.13	1.16	0.77	0.24	0.92	1.12	0.75	0.31	0.95	1.23	0.70	0.38	0.84
Classification by Form	6	1.98	1.20	0.43	1.58	2.37	1.28	0.94	1.66	2.39	1.38	1.42	1.77	2.55	1.48	1.65	1.66
Classification by Number	6	1.84	1.10	0.35	1.62	2.24	1.22	0.46	1.84	2.12	1.34	1.26	1.95	2.36	1.41	1.32	1.88
Classification by Function	9	5.18	1.90	0.55	2.34	5.72	1.81	1.29	2.04	5.75	1.81	1.75	2.16	5.73	1.99	2.18	2.20
Puzzles Total	5	1.86	1.44	0.32	1.84	2.10	1.37	0.78	1.69	2.17	1.24	0.79	1.58	2.19	1.33	1.01	1.58
Peabody Raw Score (Pretest only)	80	32.40	10.45			35.37	9.99			32.26	10.92			36.25	11.51		
Peabody Mental Age (Months)	--	40.65	11.30			43.48	11.50			40.88	12.11			45.15	13.95		
Hidden Triangles Total (Posttest)	10	4.26	1.27			4.66	1.57			4.84	1.42			4.68	1.32		
Which Comes First Total (Posttest)	12	4.45	1.98			4.92	2.42			5.87	2.74			6.80	2.54		

TABLE 12c

Pretest and Gain Scores for All Disadvantaged 5-Year-Old Children

(by quartiles)

N = 159

Test & Subtest	Maximum Possible Score	Q 1 N=37				Q 2 N=40				Q 3 N=38				Q 4 N=44			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	88.68	29.20	23.08	19.14	101.23	30.69	26.75	17.30	104.13	30.82	38.97	25.73	120.91	29.78	37.32	26.37
Body Parts Total	32	20.38	7.15	3.92	6.68	23.35	4.34	2.93	4.98	23.18	6.02	4.08	5.34	25.73	4.40	3.41	3.55
Pointing to Body Parts	5	3.27	1.41	0.76	1.48	4.25	0.95	0.20	0.72	4.00	1.01	0.32	1.07	4.20	0.99	0.55	0.98
Naming Body Parts	15	9.24	3.09	1.19	3.07	10.45	1.84	0.95	2.10	10.16	2.70	1.76	2.27	11.69	1.90	1.27	1.96
Function of Body Parts (Point)	8	5.57	2.38	1.14	2.25	5.85	2.14	1.05	2.58	6.05	2.31	1.26	2.55	6.53	1.90	1.14	1.81
Function of Body Parts (Verbal)	4	2.30	1.61	0.84	1.69	2.83	1.30	0.73	1.28	2.97	1.26	0.74	1.18	3.31	1.16	0.45	0.95
Letters Total	58	14.97	5.59	6.35	8.45	18.40	10.05	8.70	9.70	18.79	8.98	13.66	11.64	24.16	12.71	14.32	11.71
Recognizing Letters	8	2.46	1.63	0.95	2.34	3.20	2.05	1.28	2.61	3.32	2.04	2.24	2.76	4.36	2.50	1.93	2.94
Naming Capital Letters	16	1.65	2.37	2.57	3.86	2.68	4.72	4.03	4.99	2.58	4.18	6.34	5.19	5.04	5.66	6.55	5.32
Naming Lower Case Letters	8	0.54	0.84	1.05	2.21	1.10	2.05	1.28	2.53	0.84	1.72	2.61	2.64	1.89	2.52	2.82	2.93
Matching Letters in Words	4	3.05	1.20	0.73	1.15	3.28	1.20	0.50	1.20	3.64	0.57	0.21	0.58	3.58	0.75	0.32	0.77
Recognizing Letters in Words	4	1.59	1.01	0.16	1.48	1.43	1.17	0.80	1.36	1.42	1.13	1.03	1.68	1.82	1.39	1.07	1.70
Initial Sounds	4	0.78	0.67	0.24	1.09	1.08	0.89	-0.03	1.21	1.08	0.78	0.21	1.04	1.09	0.93	0.45	1.37
Reading Words	6	0.00	0.00	0.00	0.00	0.08	0.47	0.28	0.55	0.05	0.32	0.55	0.98	0.31	0.82	0.61	0.87
Forms Total	20	9.35	3.74	2.81	3.06	11.08	4.15	3.30	3.04	11.97	3.15	3.39	3.58	12.20	3.15	4.64	3.25
Recognizing Forms	4	2.08	1.14	0.27	1.56	2.38	1.25	0.20	1.42	2.42	1.15	0.68	1.69	2.11	1.09	1.18	1.44
Naming Forms	4	1.00	1.18	0.68	1.08	1.50	1.30	1.13	1.02	1.55	1.22	1.18	1.56	1.84	1.15	1.30	1.17
Numbers Total	54	21.00	10.71	5.95	6.87	23.53	11.37	7.58	6.54	25.89	11.87	11.18	9.41	31.89	10.12	9.66	9.93
Recognizing Numbers	6	2.11	1.54	0.70	1.68	2.10	1.69	1.08	1.70	2.45	1.83	1.95	2.22	3.42	2.02	1.45	2.26
Naming Numbers	15	1.92	3.59	2.19	3.00	2.35	3.62	2.73	2.94	3.26	4.41	4.66	4.19	5.31	4.82	4.89	4.71
Numerosity	6	3.65	1.64	0.92	1.38	4.23	1.91	0.75	1.72	4.11	1.56	0.84	1.39	4.93	1.29	0.68	1.20
Counting	9	5.65	2.66	0.54	2.18	5.93	2.47	1.45	2.16	6.66	1.91	1.11	1.67	7.20	1.83	0.73	2.31
Addition and Subtraction	7	1.84	1.72	0.51	1.82	2.45	2.04	0.68	1.31	2.63	1.98	1.11	1.83	3.29	1.80	0.39	1.71
Matching Subtest	11	8.84	2.61	1.05	2.84	9.48	1.72	0.70	1.64	9.97	1.05	0.32	1.49	9.96	1.19	0.66	1.27
Relational Terms Total	17	10.81	3.28	0.97	2.85	11.28	3.44	1.18	3.56	11.11	2.66	1.58	2.34	12.02	2.62	1.25	3.05
Amount Relationships	9	5.32	1.76	0.41	1.71	5.35	2.17	0.53	2.36	5.24	1.87	0.76	2.01	5.87	1.70	0.61	1.90
Size Relationships	2	1.76	0.44	0.03	0.50	1.78	0.48	0.13	0.56	1.82	0.46	0.08	0.43	1.87	0.34	0.14	0.35
Position Relationships	5	3.35	1.55	0.35	1.67	3.48	1.30	0.45	1.68	3.53	1.06	0.50	1.08	3.82	1.01	0.25	1.28
Sorting Total	6	2.89	1.33	0.62	1.74	2.83	1.50	0.95	1.85	2.74	1.67	1.71	1.63	3.27	1.57	1.36	1.87
Classification Total	24	12.05	5.07	3.19	4.08	14.28	4.74	2.45	5.08	14.05	4.98	4.13	4.64	15.49	4.24	4.18	4.66
Classification by Size	2	1.24	0.76	0.19	0.88	1.35	0.74	0.18	0.90	1.37	0.79	0.24	0.85	1.36	0.71	0.48	0.88
Classification by Form	6	2.22	1.49	0.78	1.34	3.05	1.69	0.88	1.91	3.18	1.37	0.89	1.72	3.31	1.24	1.30	1.61
Classification by Number	6	2.49	1.71	0.70	1.54	2.88	1.47	0.25	1.89	2.89	1.64	0.84	1.52	3.47	1.52	0.70	1.76
Classification by Function	9	5.73	1.91	1.27	2.01	6.50	1.77	1.00	2.18	6.03	2.02	1.95	1.92	6.87	1.47	1.36	1.73
Puzzles Total	5	2.05	1.39	1.00	1.83	2.33	1.46	1.08	1.65	2.45	1.37	0.92	1.62	3.02	1.45	0.73	1.60
Peabody Raw Score (Pretest only)	80	37.81	9.87			39.10	11.54			43.68	10.44			45.82	9.29		
Peabody Mental Age (Months)	--	46.08	12.29			48.63	16.15			53.87	15.00			56.62	13.51		
Hidden Triangles Total (Posttest)	10	4.65	1.55			4.61	1.60			5.05	1.45			5.09	1.58		
Which Comes First Total (Posttest)	12	5.16	2.93			6.17	2.88			6.63	2.89			7.62	3.20		

FIGURE 3a
Pretest and Gain on Total Test Score for All Disadvantaged 3, 4, and 5-Year-Old Children

(by viewing quartiles)

N=127 3-Year-Olds
N=433 4-Year-Olds
N=159 5-Year-Olds

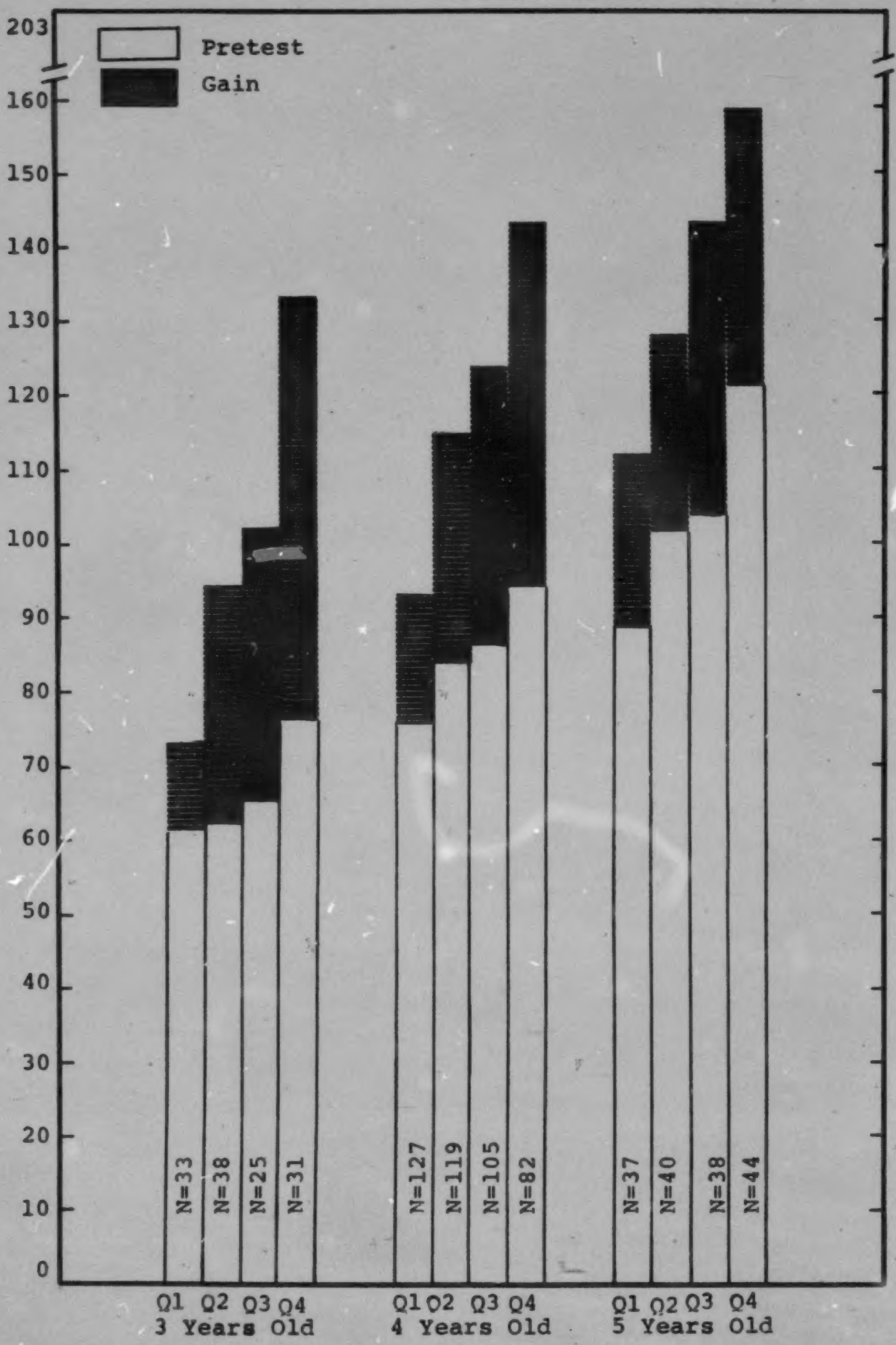


TABLE 24

Pretest and Gain Scores for All Advantaged Children

(by quartiles)

N = 169

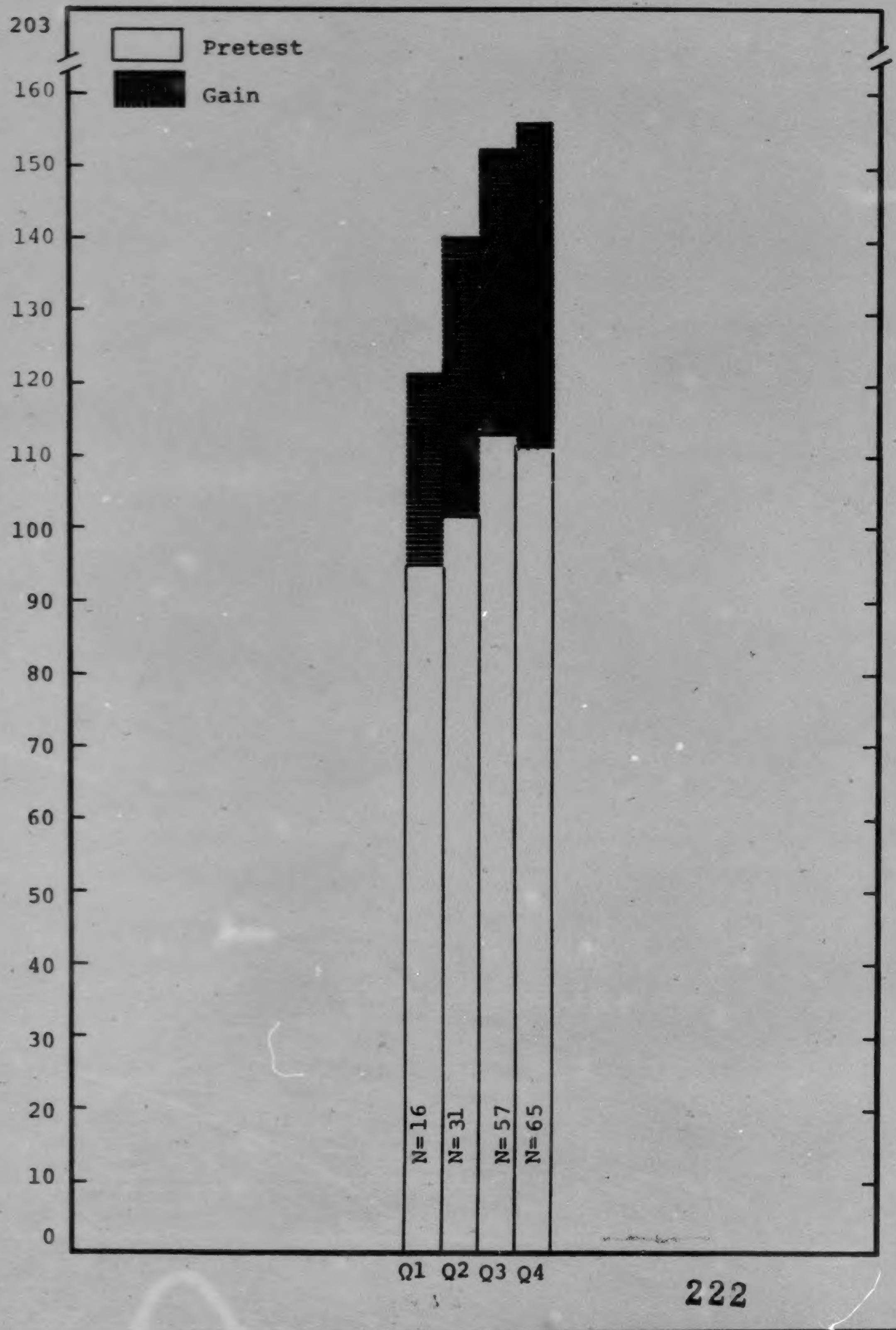
Test & Subtest	Maximum Possible Score	Q 1 N=16 Pretest Mean	Q 1 N=16 Pretest SD	Q 1 N=16 Gain Mean	Q 1 N=16 Gain SD	Q 2 N=31 Pretest Mean	Q 2 N=31 Pretest SD	Q 2 N=31 Gain Mean	Q 2 N=31 Gain SD	Q 3 N=57 Pretest Mean	Q 3 N=57 Pretest SD	Q 3 N=57 Gain Mean	Q 3 N=57 Gain SD	Q 4 N=65 Pretest Mean	Q 4 N=65 Pretest SD	Q 4 N=65 Gain Mean	Q 4 N=65 Gain SD
Grand Total	203	95.44	23.90	26.69	16.04	102.13	21.65	38.65	17.02	112.77	24.36	40.46	18.83	110.83	25.63	45.25	22.87
Body Parts Total	32	24.13	5.77	3.19	4.97	25.74	4.90	2.52	4.31	26.37	5.64	2.35	4.28	25.71	4.79	3.14	4.50
Pointing to Body Parts	5	4.13	1.15	0.25	0.93	4.35	0.75	0.29	0.86	4.30	1.10	0.30	0.98	4.49	0.77	0.09	1.03
Naming Body Parts	15	11.06	2.65	1.25	3.02	11.39	2.75	0.87	2.51	11.86	3.20	0.89	2.66	11.38	3.13	1.32	3.15
Function of Body Parts (Point)	8	5.94	2.11	1.13	2.22	6.71	1.44	0.81	1.54	6.77	1.66	0.79	1.59	6.40	1.63	1.23	1.63
Function of Body Parts (Verbal)	4	3.00	1.26	0.56	0.96	3.29	1.01	0.55	0.99	3.44	1.07	0.37	1.11	3.43	1.07	0.49	1.09
Letters Total	58	15.19	8.79	8.06	9.26	16.81	7.03	12.48	10.10	19.25	10.21	17.09	9.99	18.62	8.86	19.63	11.46
Recognizing Letters	8	2.25	2.08	1.19	2.14	2.48	1.69	2.52	2.57	3.07	2.10	2.81	2.10	3.34	2.05	2.78	2.51
Naming Capital Letters	16	1.75	3.77	3.75	4.39	2.55	3.91	5.87	4.89	3.77	4.92	7.65	5.24	3.69	4.26	8.72	4.80
Naming Lower Case Letters	8	0.56	2.00	1.13	1.54	0.52	0.81	1.97	2.23	1.02	1.55	3.37	2.51	0.78	1.24	3.66	2.68
Matching Letters in Words	4	3.56	0.81	0.31	0.87	3.45	0.72	0.55	0.72	3.47	0.87	0.37	0.96	3.26	1.08	0.58	1.27
Recognizing Letters in Words	4	1.44	1.21	0.38	1.20	1.35	0.95	0.55	1.18	1.42	1.18	1.09	1.26	1.42	1.21	1.20	1.50
Initial Sounds	4	0.63	0.96	0.19	1.33	0.68	0.70	0.52	1.18	0.95	0.87	0.39	1.35	0.77	0.80	0.89	1.06
Reading Words	6	0.0	0.0	0.06	0.25	0.0	0.0	0.10	0.30	0.04	0.26	0.30	0.65	0.03	0.17	0.35	0.69
Forms Total	20	10.63	3.48	3.00	4.23	11.35	3.20	4.32	2.74	12.37	3.05	3.88	3.59	12.31	3.15	4.62	3.39
Recognizing Forms	4	2.44	1.36	0.25	1.69	2.10	1.19	0.94	1.44	2.47	1.10	0.54	1.76	2.54	1.25	1.08	1.41
Naming Forms	4	1.31	1.01	0.88	1.82	1.32	1.14	1.29	1.22	1.81	1.17	1.10	1.23	1.68	1.00	1.46	1.20
Numbers Total	54	22.13	10.37	8.69	5.38	24.13	8.65	12.06	6.79	28.07	9.80	12.16	8.17	**27.50**	10.83	12.40	7.68
Recognizing Numbers	6	2.88	2.09	0.63	1.50	2.23	1.75	2.16	1.64	2.81	1.98	2.05	2.14	2.98	1.80	1.85	1.93
Naming Numbers	15	3.06	4.25	2.94	3.00	2.77	3.82	4.81	4.10	4.09	4.43	5.91	4.15	4.18	4.50	5.71	4.33
Numerosity	6	3.56	1.75	1.50	1.55	4.58	1.46	0.68	1.17	4.89	1.16	0.37	0.94	4.85	1.31	0.48	1.20
Counting	9	5.19	2.88	1.56	1.90	6.23	1.94	1.19	1.42	6.86	1.85	0.84	1.49	6.46	2.39	1.18	2.11
Addition and Subtraction	7	1.94	1.61	0.50	1.51	2.06	1.59	1.16	1.37	2.51	1.30	0.82	1.30	2.55	1.70	0.74	1.53
Matching Subtest	11	9.31	1.45	0.81	1.17	9.90	1.01	0.39	1.20	9.67	1.09	0.65	1.11	9.32	1.60	1.05	1.74
Relational Terms Total	17	10.63	2.58	1.56	2.85	10.48	2.34	2.10	2.69	11.58	1.96	1.19	2.19	11.71	2.57	1.38	2.64
Amount Relationships	9	4.75	1.39	1.13	1.15	4.68	1.54	1.52	1.67	5.61	1.46	0.40	1.72	5.52	1.52	0.80	1.61
Size Relationships	2	1.75	0.58	0.25	0.58	1.90	0.30	0.10	0.30	1.84	0.41	0.11	0.41	1.89	0.31	0.05	0.37
Position Relationships	5	3.50	1.46	0.13	1.82	3.19	1.25	0.48	1.29	3.47	1.10	0.60	1.33	3.58	1.09	0.48	1.38
Sorting Total	6	2.75	1.34	0.50	1.41	2.81	1.22	1.52	1.29	2.98	1.41	1.65	1.83	2.86	1.41	1.75	1.54
Classification Total	24	11.50	3.12	3.69	5.33	14.03	3.56	4.97	4.01	15.19	4.21	4.58	4.95	15.11	4.23	4.55	4.27
Classification by Size	2	1.00	0.73	0.50	1.10	1.45	0.68	0.29	0.64	1.47	0.68	0.37	0.84	1.55	0.66	0.26	0.78
Classification by Form	6	2.38	1.41	0.88	2.22	3.06	1.36	1.39	1.50	3.16	1.52	1.54	1.74	3.26	1.43	1.37	1.59
Classification bv Number	6	2.19	1.05	1.06	1.61	2.55	1.18	1.16	2.02	3.05	1.51	1.14	2.17	2.91	1.49	1.12	1.76
Classification by Function	9	5.56	1.36	1.06	1.48	6.32	1.60	2.06	1.86	6.89	1.47	1.49	1.78	6.74	1.73	1.68	1.78
Puzzles Total	5	2.75	1.18	0.13	0.96	2.23	1.15	1.23	1.41	2.93	1.42	0.79	1.59	3.15	1.21	0.48	1.60
Peabody Raw Score (Pretest only)	80	42.31	9.48			49.45	8.18			49.19	9.93			48.12	9.39		
Peabody Mental Age (Months)	--	51.56	11.97			62.03	13.34			62.49	15.55			60.29	15.51		
Hidden Triangles Total (Posttest)	10	4.38	1.20			4.71	1.13			4.33	1.46			4.45	1.31		
Which Comes First Total	12	6.00	2.88			7.06	2.93			7.79	2.49			8.40	2.83		

FIGURE 7a

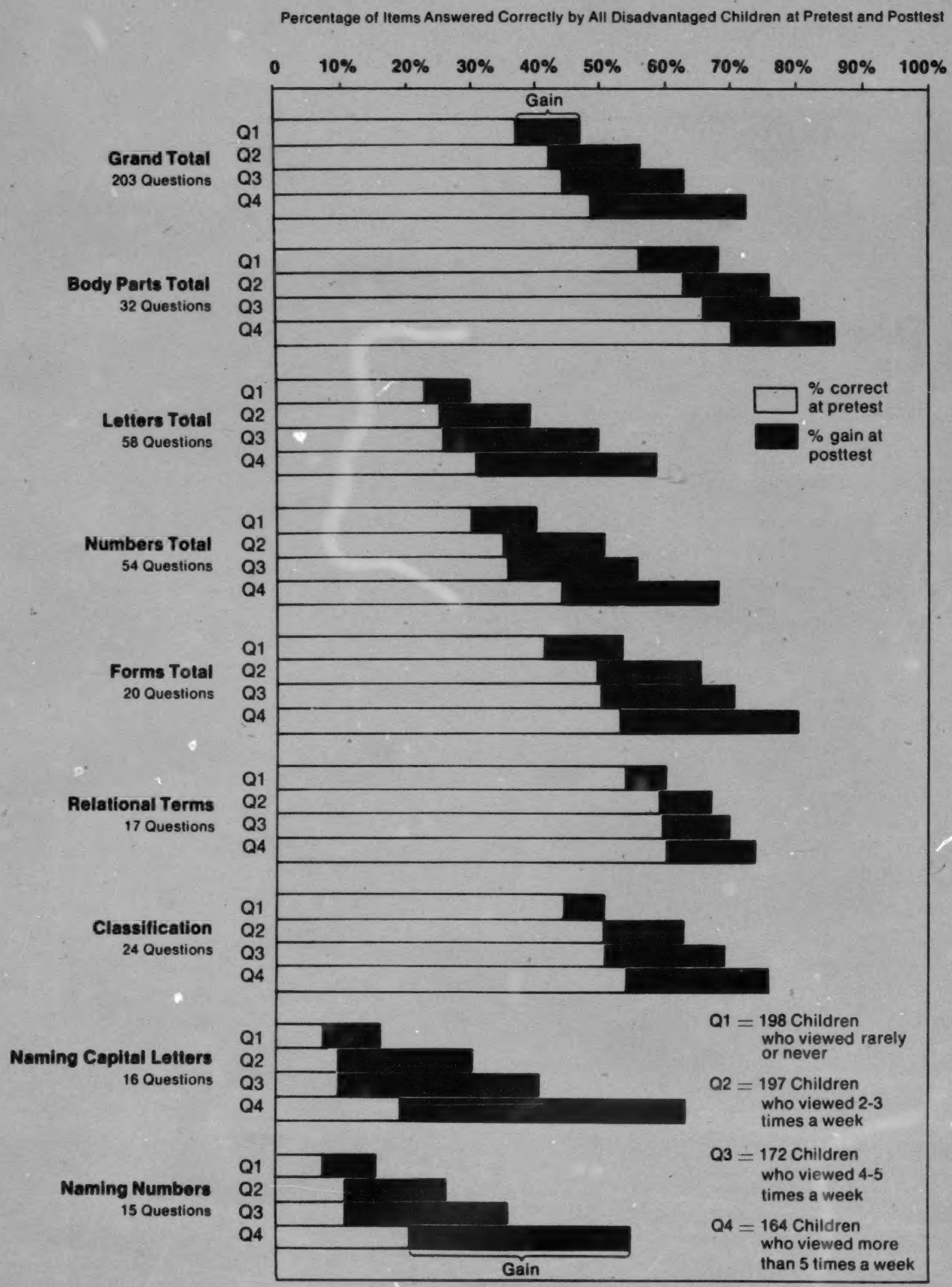
Pretest and Gain on Total Test Score for All Advantaged Children

(by viewing quartiles)

N=169



SESAME STREET: FIRST YEAR REPORT CARD



APPENDIX B

THE GOALS OF SESAME STREET

Statement of Instructional Goals for the 1970-71 Experimental Season of Sesame Street

I. Symbolic Representation

A. Pre-Reading Goals

1. Letters

a. Matching - Given a printed letter the child can select the identical letter from a set of printed letters.

* b. Recognition - Given the verbal label for a letter the child can select the appropriate letter from a set of printed letters.

* c. Labelling - Given a printed letter the child can provide the verbal label.

d. Letter Sounds

1. For sustaining consonants (f,l,m,n,r,s,v), given the printed letter the child can produce that letter's corresponding sound.

2. Given a set of words presented orally all beginning with the same letter sound, the child can select the letter associated with the sound from a set of printed letters.

3. Given a set of words presented orally, all beginning with the same letter sound, the child can select another word with the same initial letter sound from a set of words.

* e. Recitation of the Alphabet - the child can recite the alphabet.

2. Words

* a. Matching - Given a printed word the child can select an identical word from a set of printed words.

b. Boundaries of a word - Given a printed sentence the child can correctly point to each word in the sentence.

c. Temporal-Sequence/Spatial-Sequence Correspondence (Words and Sentences are read from left to right).

1. Given a printed word the child can point to the first and last letter.

2. Given a printed sentence the child can point to the first word and the last word.

* d. Decoding - Given the first five words on the reading vocabulary list (ran, set, big, mop, fun), the child can decode other related words generated by substitution of a new initial consonant. (ex. given the word "ran" the child can decode "man" and "can").

e. Word Recognition - For any of the words on the Sesame Street Word List, the child can recognize the given word when it is presented in a variety of contexts.

* f. Reading - The child can read each of the 20 words on the Sesame Street Word List.

Sesame Street Word List

1. ran
2. set
3. big
4. mop
5. fun
6. bird
7. bus
8. danger
9. exit
10. I
11. is
12. love
13. me
14. school
15. stop
16. street
17. telephone
18. the
19. walk
20. you

* g. Spanish-English Vocabulary (to be determined)

B. Numbers Goals

1. Numbers 1-20

* a. Matching - Given a printed numeral the child can select the identical numeral from a set of printed numerals..

* b. Recognition - Given the verbal label for a numeral the child can select the appropriate numeral from a set of printed numerals.

* c. Labelling - Given a printed numeral the child can provide the verbal label.

* d. Recitation

1. The child can recite the numbers from 1 to 20.

* 2. Given a starting point under ten the child can count from that number to any given higher number up to ten (ex. count from 3 to 8).

2. Numerical Operations

a. Enumeration - The child can define a set or subset of up to 10 objects from a larger set.

ex. 1 "Here are some pennies. How many are there?"

ex. 2 "Here are some pennies. Take two."

* 1. The child can recognize that the last number reached in counting is the total number in the set: ex. "Count the pennies. How many are there?"

2. The child can make use of counting strategies (ex. when counting objects arranged in a circle the child will identify the first object counted by marking it, moving it or noting a distinguishing characteristic of that object.)

b. Equality - The child can perform the appropriate operations needed to balance an equation.

1. Conservation of Number - The child can match sets of equal number regardless of configuration
(ex. 000 = 0).
0 0

* 2. Numeral/Number Correspondence - The child can assign the correct numeral to sets of differing numbers (ex. 000 goes with the numeral "3").

* c. Addition & Subtraction - The child can add or subtract 1 or more objects from any group of less than 10 objects.

C. Geometric Forms (circle, square, triangle, rectangle).

* 1. Labelling - Given a drawing, cut-out or object in the shape of a circle, square, triangle or rectangle, the child can provide a verbal label for that shape.

* 2. Recognition - Given the verbal label "circle," "square," "triangle" or "rectangle," the child can select the appropriate drawing, cut-out or object from a set.

II. Cognitive Organization

A. Perceptual Discrimination and Orientation

1. Visual Discrimination

   a. Matching - The child can match a given object or picture to one of a varied set of objects or pictures which is similar in form, size or position.

   b. Recognition of Embedded Figures - Given a form the child can find its counterpart embedded in a picture or drawing.

   * c. Part/Whole Relationships - The child can structure parts into a meaningful whole:

      1. Given a model and a selection of parts the child can select those parts which are essential to the construction of the model.

      2. Given a model and an assortment of its parts, the child can arrange these parts to match the model.

2. Auditory Discrimination

   a. Sound Identification - The child can associate given sounds with familiar objects or animals.

   b. Copying Rhythms - The child can copy a rhythmic pattern (a by-product of this goal will be the promotion of physical activity on the part of the viewers).

   c. Rhyming Words - Given two or more words that rhyme, the child can select or supply a third rhyming word.

3. Subjective/Objective Discrimination - The child can distinguish between the objective (indisputable) properties of an object and the subjective (judgmental) properties which he ascribes to the object.

* B. Relational Concepts - The child can demonstrate his understanding of various relational concepts.

   1. Same/Different - This concept underlies all of the following relational concept categories.

   2. Size Relationships - Big/Bigger/Biggest; Small/Smaller/Smallest; Short/Tall.

   3. Quantitative Relationships - None, Some, More, Most, All, Less.

   4. Positional Relationships - Under, Over, On, Through, Around, Next To, First, Last, Up, Down, Beginning, End.

   5. Distance Relationships - Near, Far, Close To, Away From.

6. Temporal Relationships - First, Last, Before, After, Next, Beginning, End.

C. Classification

* 1. Sorting (Which of these things is not like the others?) Given a group of objects several of which have an attribute in common, the child can sort out the inappropriate object on the basis of:

a. size
b. form
c. function
d. class
e. quantity

* 2. Classifying (Which of these things belongs with these?) Given at least two objects that define the basis of grouping, the child can select an additional object or objects that belong in the same group on the basis of:

a. size
b. form
c. function
d. class
e. quantity

3. Multiple Classification

* a. Property Identification - Given any object the child can name at least two properties of that object. Ex. "The ball is round and red."

* b. Multiple Class Inclusion and Differentiation - Given any two objects the child can recognize that they are alike on one dimension and different on another. Ex. "Both of these things are round but one is red and one is blue."

* c. Multiple Classification and Regrouping - Given any group of objects the child can:

* 1. Classify them on the basis of more than one characteristic. Ex. Given a set of red and blue circles and squares the child can divide the set into 4 subsets:
a. red circles b. red squares c. blue circles
d. blue squares.

* 2. Classify them on the basis of one characteristic (ex. color) and then reclassify the same objects on the basis of another characteristic (ex. shape). (The point will be made that there is often no single right answer.)

III. Reasoning and Problem Solving

A. Making Inferences

1. Inferring Antecedent Events - The child can suggest events which may have led up to a situation.

2. Inferring Consequent Events - The child can predict future outcomes that may result from a situation.

B. Generating Explanations and Solutions - Given a familiar problem, the child can provide adequate explanations and solutions to that problem.

C. Evaluating Explanations and Solutions - Given several possible explanations or solutions to a problem the child can evaluate these solutions in reality (trial and error) or in his mind (pretesting). When presented with alternative solutions he can select the best one.

IV. The Child and His World

A. Self

* 1. The Mind and Its Powers - The child is aware of his mental powers. He understands that his brain has the capacity to:

a. Pretest Solutions
b. Remember
c. Imagine
d. Plan
e. Guess from progressively revealed cues

2. Body Parts and Functions - The child can identify, label and state or recognize the function of such body parts as the:

a. head
b. nose
c. ear
d. eye
e. tongue
f. arm
g. elbow
h. hand
i. finger
j. leg
k. knee
l. foot

* 3. Audience Participation - The child will respond overtly to those sections of Sesame Street designed to elicit active participation.

4. Emotions - The child can recognize and label such emotions as:

a. fear
b. happiness
c. sadness
d. anger
e. surprise
f. pride

B. Social Units

1. Roles and Functions - Given the name of certain roles in the family and in the community the child can describe appropriate responsibilities associated with those roles.

ex. The child can name one or more principal functions of a father, mother, policeman, mailman, farmer, baker, fireman, doctor, dentist etc.

2. Social Groups and Institutions

   a. The Family and the Home

      1. The child recognizes that various types of structures all serve as homes.

      2. The child recognizes the family as a unit and can describe several types of family activities.

   b. The Neighborhood - The child is familiar with the social and physical boundaries of his own neighborhood.

   c. The City or Town - The child recognizes various structures, spaces, and points of interest which make up the city or town.

      ex. 1. The child is familiar with the concepts of a zoo, park , playground, airport etc. and with stores where various types of common items may be purchased.

      ex. 2. The child understands that there are many different cities, that they have finite boundaries, that various goods or products must be transported in and out, and that various modes of transportation are employed.

      ex. 3. The child identifies the respective functions of such institutions as the school, post office, and hospital.

C. Social Interactions

1. Differing Perspectives

   a. The child realizes that different individuals or groups may have different reactions in similar situations.

   b. The child demonstrates that he is aware of and values the feelings, preferences and modes of behavior of other individuals and groups.

2. Cooperation - The child recognizes that in certain situations it is beneficial for two or more individuals to work together toward a common goal.

   a. Division of Labor - When a child is a member of a group that has a common goal, he realizes that the goal will be more easily achieved if each member of the group shares in the work or planning.

b. Combining of Skills - When a child is a member of a group that has a common goal, he realizes that the goal will be most easily accomplished if each member of the group contributes his own unique or special skill.

c. Reciprocity - The child realizes that in certain situations, in order to accomplish his goal, he must request the assistance of others and in turn assist them in accomplishing their goals.

3. Conflict Resolution - The child can provide adequate resolutions to conflict when he is presented with a familiar conflict situation.

D. The Man-Made Environment - The child is generally familiar with the form and functions of:

1. Machines and tools.

2. Buildings and other structures.

E. The Natural Environment - The child has a general awareness of the characteristics of:

1. Land, sky and water.

2. City and country.

3. Plants and animals.

4. Natural process and cycles.

APPENDIX C

THE SURVEY FORM

SURVEY

The survey consists of going from door-to door throughout an area of your city and interviewing poeple using a short questionnaire. We are running the survey for two reasons:

1) to find 3 and 4 year old children who have not watched Sesame Street.

2) To get the cooperation of the children's families.

WHERE TO GO: Your coordinator will give you the names of streets for you to go. Visit every house and every apartment in the area assigned to you.

WHAT TO DO: Interview someone at every house and apartment in your area and complete an interview form for every house or apartment.

WHO TO TALK TO: If possible, try to talk to a parent of the 3 or 4 year old child. This is so you can get his or her permission during the interview. If a parent is not at home, talk to someone who is in charge of the child when you arrive. If this person or a parent is not home, go back later.

THE INTERVIEW:

Follow the directions on the Interview Form exactly. Visit every house in your area and fill out a form for every house. Read all things in capital letters. Other things in small letters are directions to you. Stop an interview if you find out that there are no 3 or 4 year old children living there or that there is no TV set that works.

Tester No.

Item 1. Address -- write the number and street. If the house has no number, describe it so that you can find it again.

Item 2. Apartment or Room Number -- if an apartment or rooming house. Write its number.

AFTER FILLING IN ITEM 1 and 2:

Knock on door or ring bell.

3. DO ANY 3 OR 4 YEAR OLD CHILDREN LIVE OR STAY HERE?

   If yes, go on to question 4.
   If no, thank the person and end interview and ask if she knows any 3 or 4 year old children living near her.

4. DO YOU HAVE A TELEVISION SET?

   If yes, go to question 5.
   If no, thank the person and end the interview.

5. IS A PARENT OR GUARDIAN OF THE 3 OR 4 YEAR OLD AT HOME?

If answer is yes, ask to speak to parent or continue talking if the person who answered is the parent.

If answer is no, ask when the parent or guardian will be at home. Try to return at that time. You must eventually talk to the person who is in charge of the child.

6. DOES THE CHILD STAY HOME DURING THE DAY?

If yes, continue

If no, ask where he is during the day. If at school or far away from home. End interview.

7. SAY: THANK YOU. MY NAME IS __________. I'M ASKING THESE QUESTIONS BECAUSE I'M WORKING FOR EDUCATIONAL TESTING SERVICE AND CHANNEL ____. WE ARE TRYING TO FIND OUT HOW MUCH CHILDREN LEARN FROM TELEVISION.

8. DOES YOU TV WORK PROPERLY?

If answer is no, write what is wrong with it next to the blank.

9. SAY: I'M NOT SELLING ANYTHING, IN FACT, WE WILL PAY A SMALL AMOUNT OF MONEY TO FAMILIES WHO ARE IN OUR SURVEY. WE'D LIKE TO TALK TO YOUR CHILD AND PLAY SOME GAMES WITH HIM. DOES THIS SOUND ALL RIGHT?

If the respondent seems willing, continue interview.

If the respondent seems unwilling, mention that all the results will be kept in strict confidence; that we will be able to help her child do well in school and that local community leaders have agreed to help. Try to find out why she is not willing. Tell her that most of the other mothers in the area are cooperating and that the games will be fun and helpful to her child. If she still does not want to cooperate, thank her and check refusal.

10. MAY I HAVE YOUR NAME PLEASE?
Write full name.

11. WHAT'S YOUR TELEPHONE NUMBER?
If no telephone, check none.

12. WHAT IS THE NAME (OR NAMES) OF THE 3 OR 4 YEAR OLD CHILD HERE?
Write the name or names of children.

13. WHEN WAS HE (SHE) BORN?
Write the month, day, and year.

14. WHAT LANGUAGE DO THE PEOPLE HER USUALLY SPEAK?

If English or Spanish, check. If another language, check other and write it in space.

15. DOES ANYONE ELSE'S 3 OR 4 YEAR OLD CHILDREN LIVE OR STAY HERE DURING THE DAY?

If yes, go to question 18.
If no, go to question 19.

16. IS THEIR MOTHER HERE SO I CAN SPEAK TO HER?

If yes, interview mother on a separate form.

If no, find out where she is so you can interview her. If she's not available, use another interview form and ask the respondent the children's names, addresses, and ages.

17. SAY: THANK YOU AGAIN. WE MAY WISH TO INCLUDE YOU AND YOUR CHILD IN OUR STUDY. I HAVE SOME INFORMATION HERE THAT WILL TELL YOU SOME MORE ABOUT IT. DO YOU HAVE ANY QUESTIONS?

Answer any questions. Then say:

THANK YOU FOR YOUR HELP.

18. DO YOU KNOW OF ANY OTHER 3 OR 4 YEAR OLD CHILDREN LIVING NEAR HERE?

POINTS TO REMEMBER

1. Visit every house or apartment in the area you are given.

2. If you find out that there are no 3 or 4 year olds living in the house, or that there is no TV end interview quickly.

3. Each interview should take no more than 5 minutes. Most of the time there will be no 3 or 4 year old child, and then the interview will take a minute or less.

4. Try to convince every person with a 3 or 4 year old child to cooperate. This may sometimes take several minutes, but it's important to try to get the cooperation of every 3 or 4 year old in the area. You can tell the respondent that $6.00 will be paid to every person in the study; that the children will receive some small gifts.

5. Ask every person you interview about the apartments and houses next door. If the person is sure there are no 3 or 4 year olds living next door, you don't have to interview those people. The person may even know that there are children next door and then you'll know for sure to interview the people.

6. If no one answers when you first call at a house, come back two more times. If there's still no answer, don't bother trying again.

7. You may stop at anytime to introduce yourself and explain whay you're asking the questions. Answer politely but quickly any questions the respondent has.

INTERVIEW FORM

Tester No. ☐☐☐

1. Address ____________________ 2. Apt. ____________

3. DO ANY 3 OR 4 YEAR OLDS LIVE HERE? YES ☐ NO ☐
(If no, end interview.)

4. DO YOU HAVE A TELEVISION? YES ☐ NO ☐
(If no, end interview.)

5. IS A PARENT OF THE CHILD AT HOME? YES ☐ NO ☐
(If yes, speak to parent)

6. DOES THE 3 OR 4 YEAR OLD STAY HOME DURING THE DAY? YES ☐ NO ☐

7. Introduce yourself and ETS. Show I.D. card.

8. DOES YOUR TV WORK? YES ☐ NO ☐

If no, WHAT'S WRONG? ____________________

9. Explain study. IS THAT ALL RIGHT? YES ☐ NOT SURE ☐ REFUSAL ☐
(If refusal, end interview.)

10. WHAT'S YOUR NAME? ____________________

11. WHAT'S TELEPHONE NO.? ____________________

12. Names of 3 and 4 year olds		13. Birth Dates		
First	Last	Month	Day	Year
First	Last	Month	Day	Year
First	Last	Month	Day	Year

14. WHAT LANGUAGE SPOKEN? ENGLISH ☐ SPANISH ☐

OTHER ☐ ____________________

15. ANY OTHER 3 or 4 YEAR OLDS HERE? YES ☐ NO ☐

16. If yes, IS THEIR MOTHER HERE? Yes ☐ No ☐

17. THANK YOU. Leave Notice.

18. ANY OTHER 3 OR 4 YEAR OLDS NEAR HERE? YES ☐ NO ☐

If yes, write addresses on reverse side for future use.

APPENDIX D

DESCRIPTION OF TESTS AND SUBTESTS AND SAMPLE ITEMS

DESCRIPTION OF TESTS AND SUBTESTS AND SAMPLE ITEMS

General Knowledge Test

1. Naming Body Parts--10 items--Child points to parts of his own body (5 items) and names the parts of the body pointed to by the tester (5 items).
2. Function of Body Parts--8 items--Child points to pictures of body parts that perform certain functions (4 items) and he supplies the names of body parts used to perform certain functions (4 items).
3. Naming Forms--4 items--Child gives name of each geometric form pointed to by tester.
4. Recognizing Forms--4 items--Child points to one of four geometric forms named by tester.
5. Community Members--4 items--Child points to instruments used by community members (2 items) and names community members who perform certain functions (2 items).

Letters Test

1. Matching by Form--9 items--Child points to one of four pictures, letters, words, or numbers that matches the stimulus.
2. Matching by Position--3 items--Child points to one of three pictures whose objects are in the same position as the stimulus.
3. Recognizing Letters--4 items--Child points to one of four letters named by tester.
4. Naming Letters--8 items--Child names each capital letter (4 items) and each lower case letter (4 items) pointed to by tester.
5. Letter Sounds--4 items--Child makes the sound of each sustaining consonant pointed to by tester.
6. Initial Sounds--6 items--Child names letter or makes sound of the initial sound of four words presented orally and pictorially (4 items). Child selects one of four pictures that begins with the same sound as the other words (2 items).

7. Decoding--8 items--Child selects one of four pictures that ends with the same sound as three other words (3 items). Child points to written word presented orally and pictorially (2 items). Child reads word presented (3 items).

8. Reading Words--9 items--Child reads words from the word list (see Goals Statement, Appendix A), as presented one at a time (5 items) or in a sentence (4 items).

9. Left-Right--4 items--Child points to the first and last words in a sentence (2 items). Child points to dots in a line (2 items).

10. Alphabet Recitation--1 item.

Numbers Test

1. Recognizing Numbers--4 items--Child points to one of four numbers named by tester.

2. Naming Numbers--6 items--Child names each number pointed to by tester.

3. Enumeration--7 items--Child counts the number of objects presented on a page (5 items). Child points to picture containing specified number of objects (2 items).

4. Conservation--7 items--Child points to one of three pictures containing the same number of objects as the stimulus.

5. Counting Strategies--8 items--Child points once to each of several dots in various configurations.

6. Number/Numeral Correspondence--3 items--Child points to one of four numerals that represent the number of objects shown to him.

7. Addition and Subtraction--13 items--Child tells tester the number of objects that result from adding or subtracting objects represented pictorially (4 items). Child reads +, -, and = signs (3 items). Child solves simple arithmetic problems orally (6 items).

8. Counting from 1 to 30--1 item.

Relational Terms Test--17 items--Child points to picture that represents a relationship of size, position, amount, or distance.

Classification Test

1. Classification--15 items--Child selects one of four pictures of objects that "belongs with" or "is like" three other pictures of objects that have one property in common (10 items). Child gives reason why the picture "belongs with" the others (5 items).

2. Double Classification--9 items--Child selects one of four pictures of objects that "belongs with" three other pictures of objects that have two characteristics in common (3 items).

Sorting Test--16 items--Child selects one of four pictures that does not "belong" or is not "like" the others because of a difference in size, number, of function (11 items). Child gives reason why the picture does not "belong" with the others (5 items).

Parts of Whole Test--10 items--Child selects one of four pictures that represent the "whole" that can be made from the parts shown to him.

Emotions Test (and Attitudes)

1. Emotions--8 items--Child points to one of two pictures that shows the way he feels (happy or sad) in certain situations that are distinctively happy or sad.

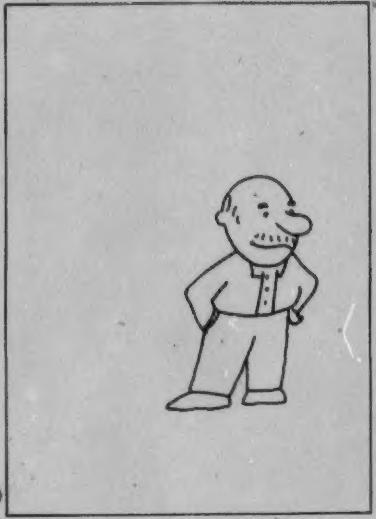
2. Attitude to School--7 items--Child points to one of two pictures that shows the way he feels in certain school situations.

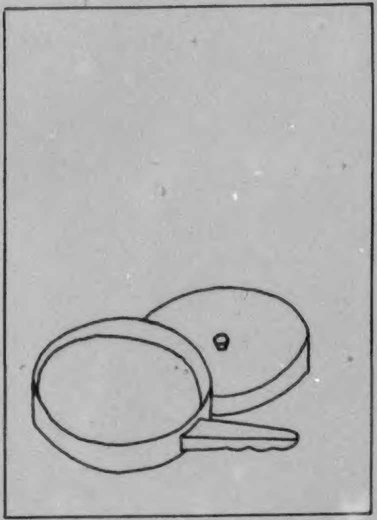
3. Attitude to Others--4 items--Child points to one of two pictures that shows the way he feels in certain situations involving other people.

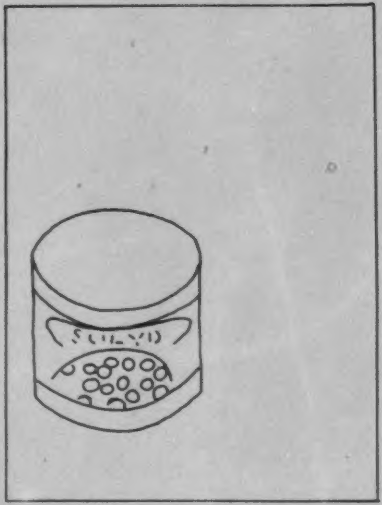
4. Attitude to Race of Others--6 items--Some items from 2 and 3 above are presented again with the race of the relevant others reversed.

EXAMPLE 1: DECODING

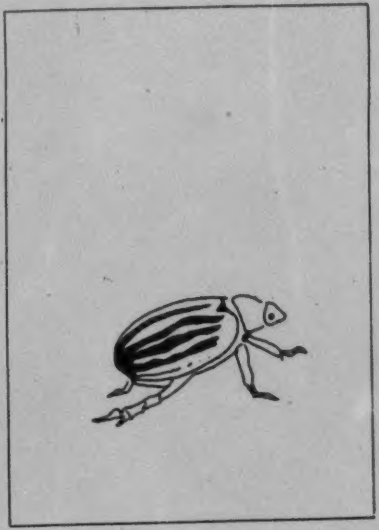
THIS IS MAN, PAN, AND CAN. THE WORDS END THE SAME. ONE WORD IS MISSING.

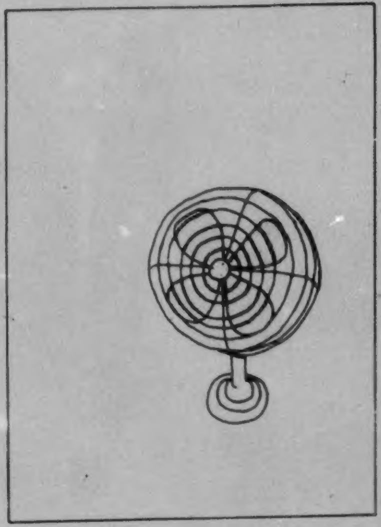


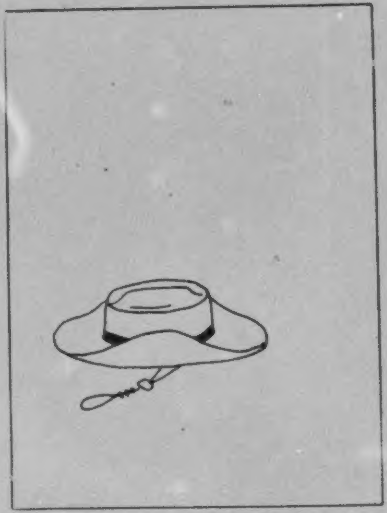


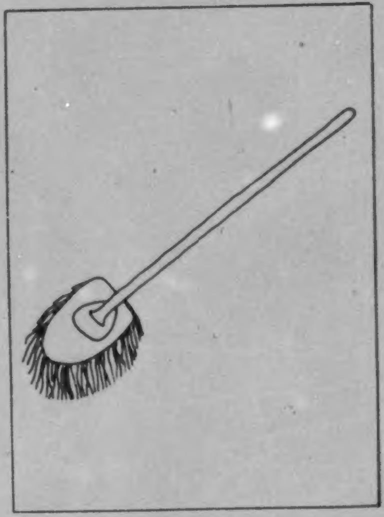


THIS IS BUG, FAN, HAT, AND MOP. WHICH ONE ENDS THE SAME AS MAN, PAN, AND CAN? WHICH ONE GOES WITH THE OTHERS?



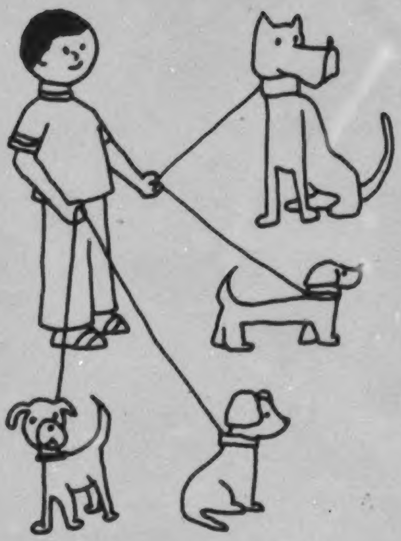


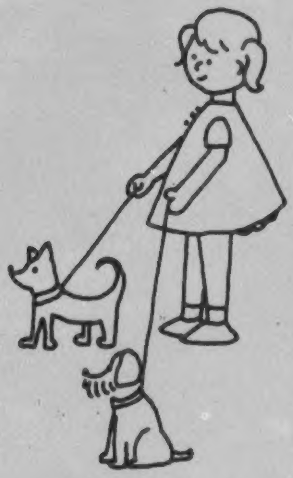




EXAMPLE 2: ADDITION

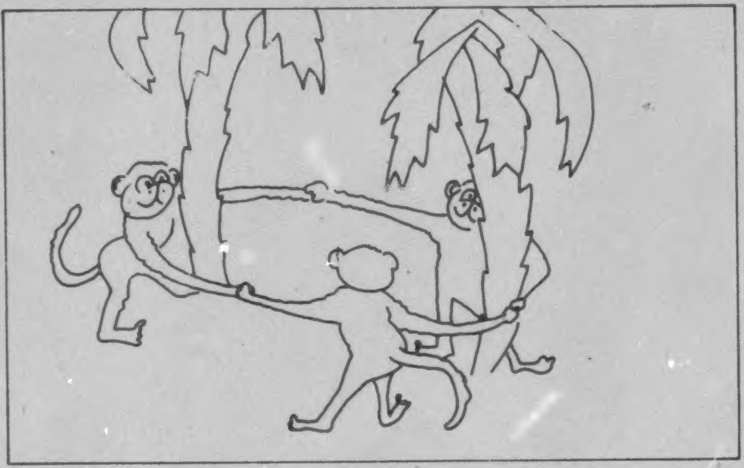
RICKY HAS 4 DOGS AND LINDA HAS 2 DOGS.
HOW MANY DOGS DO THEY HAVE TOGETHER?

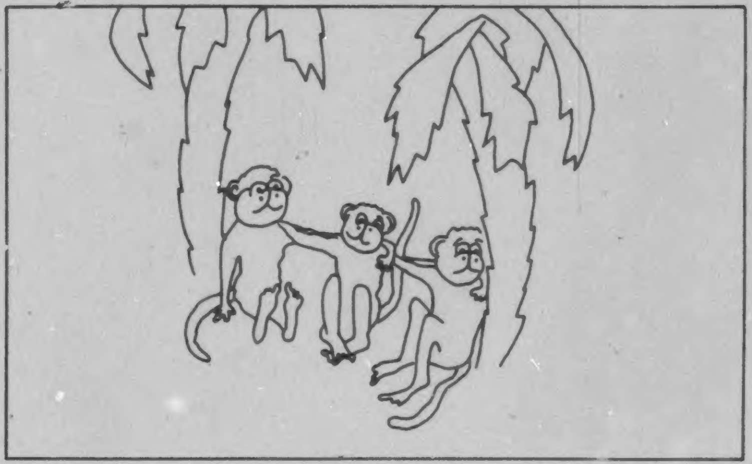


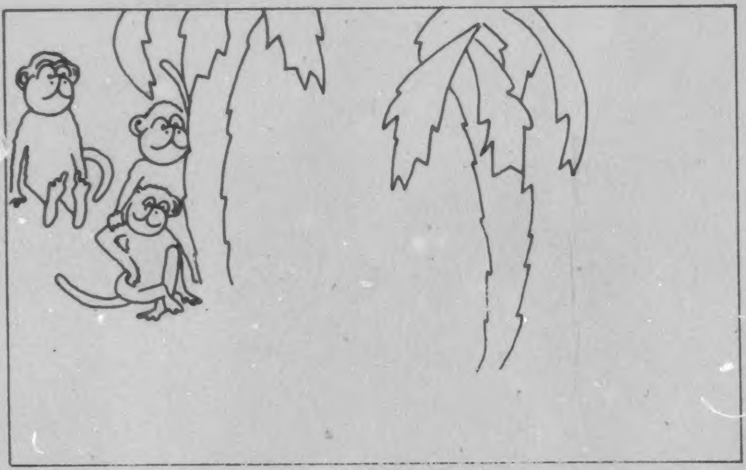


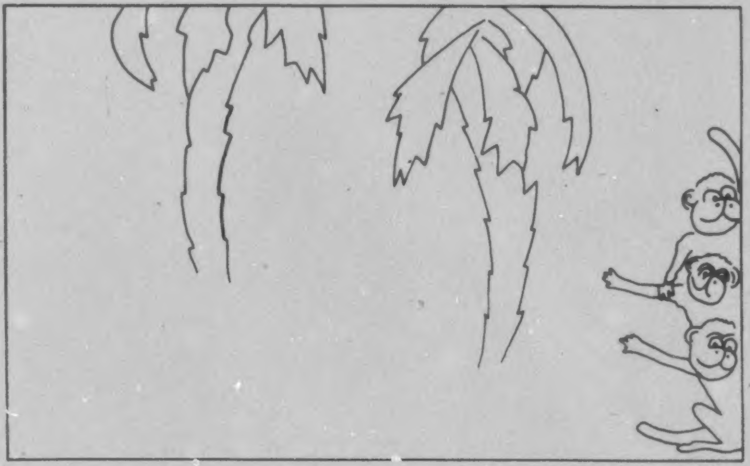
EXAMPLE 3: RELATIONAL TERMS

HERE ARE PICTURES OF MONKEYS AND TREES.
WHERE ARE THE MONKEYS BETWEEN THE TREES?



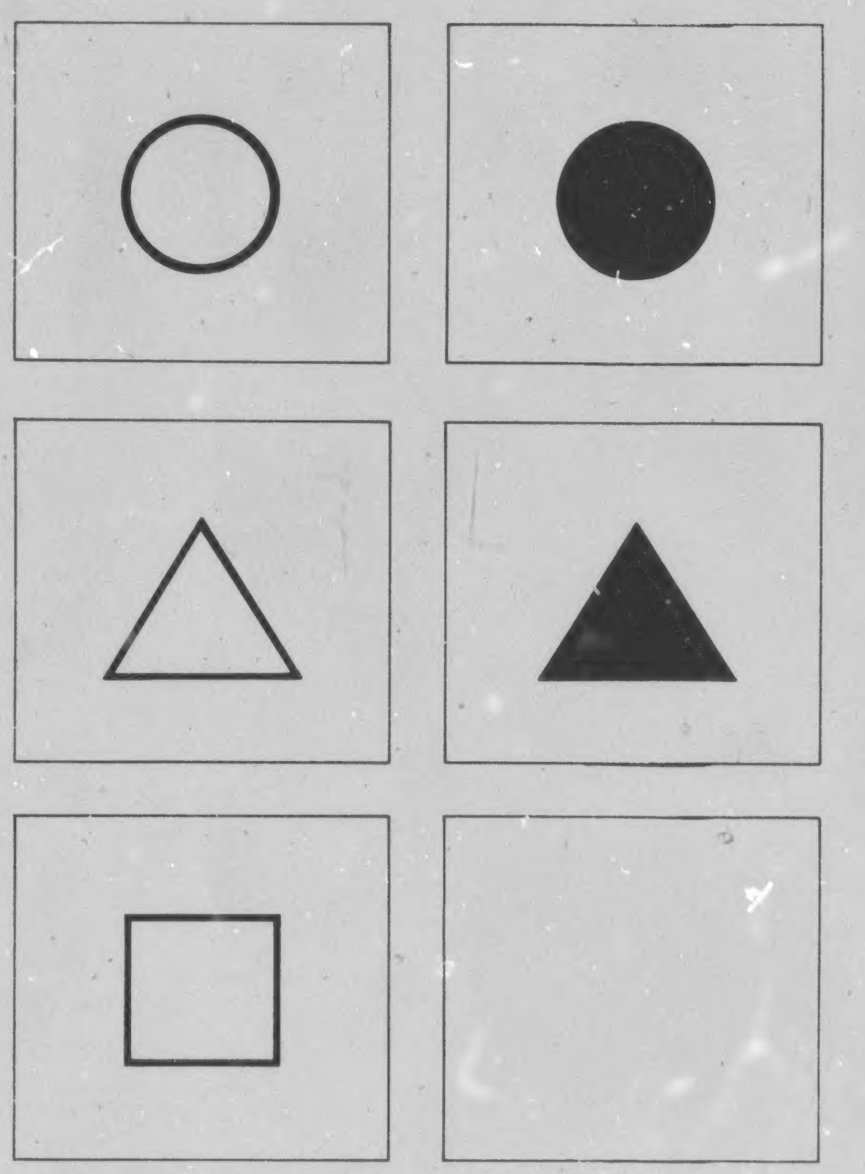




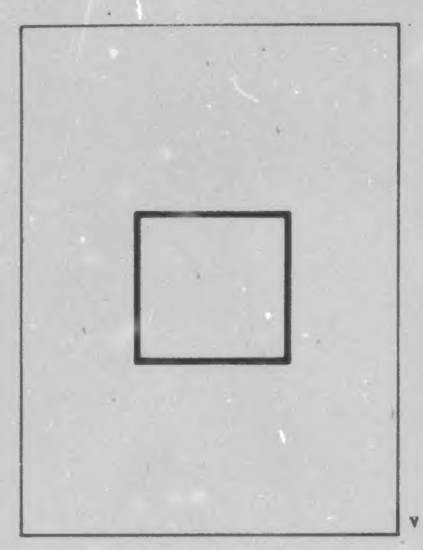


EXAMPLE 4: DOUBLE CLASSIFICATION

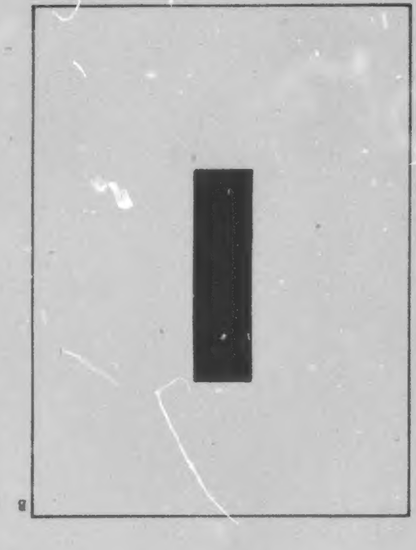
LOOK AT THE SHAPES HERE. ONE SHAPE IS MISSING IN THIS BOX.



LOOK AT THE SHAPES HERE. WHICH OF THESE GOES IN THE MISSING BOX?



A



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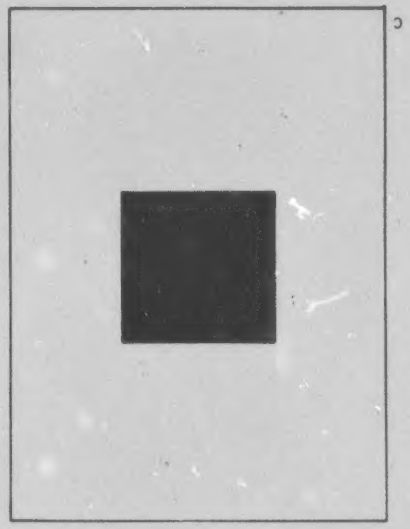

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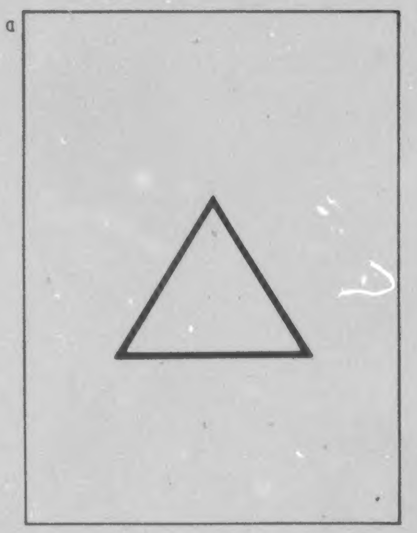

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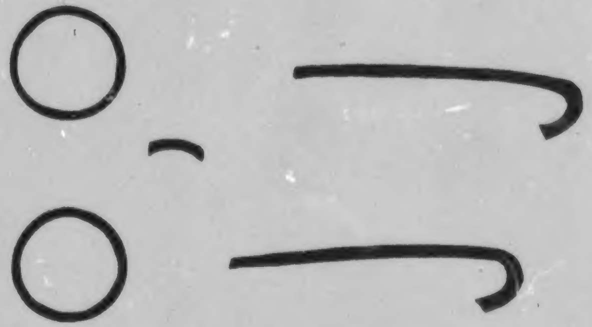
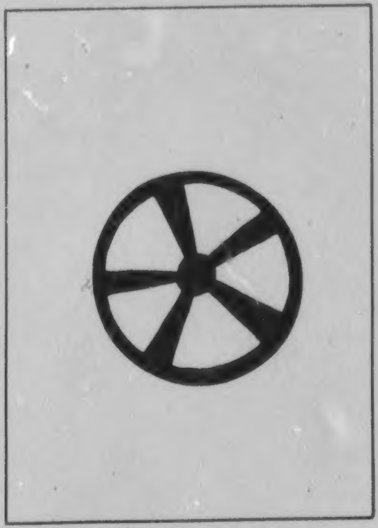
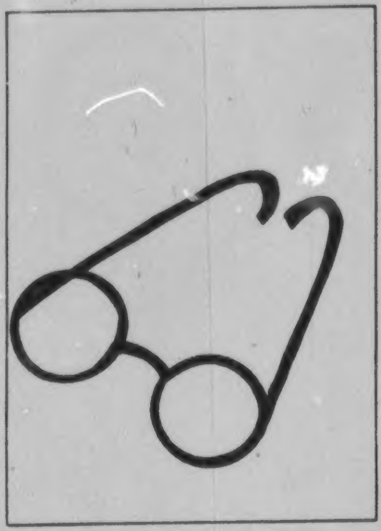
EXAMPLE 5: PARTS OF WHOLE

LOOK AT THESE PARTS. THE PARTS CAN BE PUT TOGETHER TO MAKE ONE OF THESE.



LOOK AT THIS, THIS, THIS, AND THIS. WHICH ONE CAN YOU MAKE WITH THE PARTS?


1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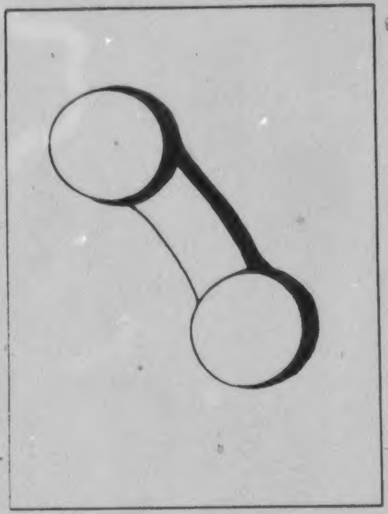
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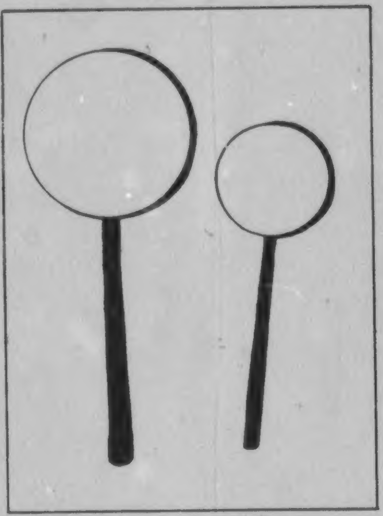
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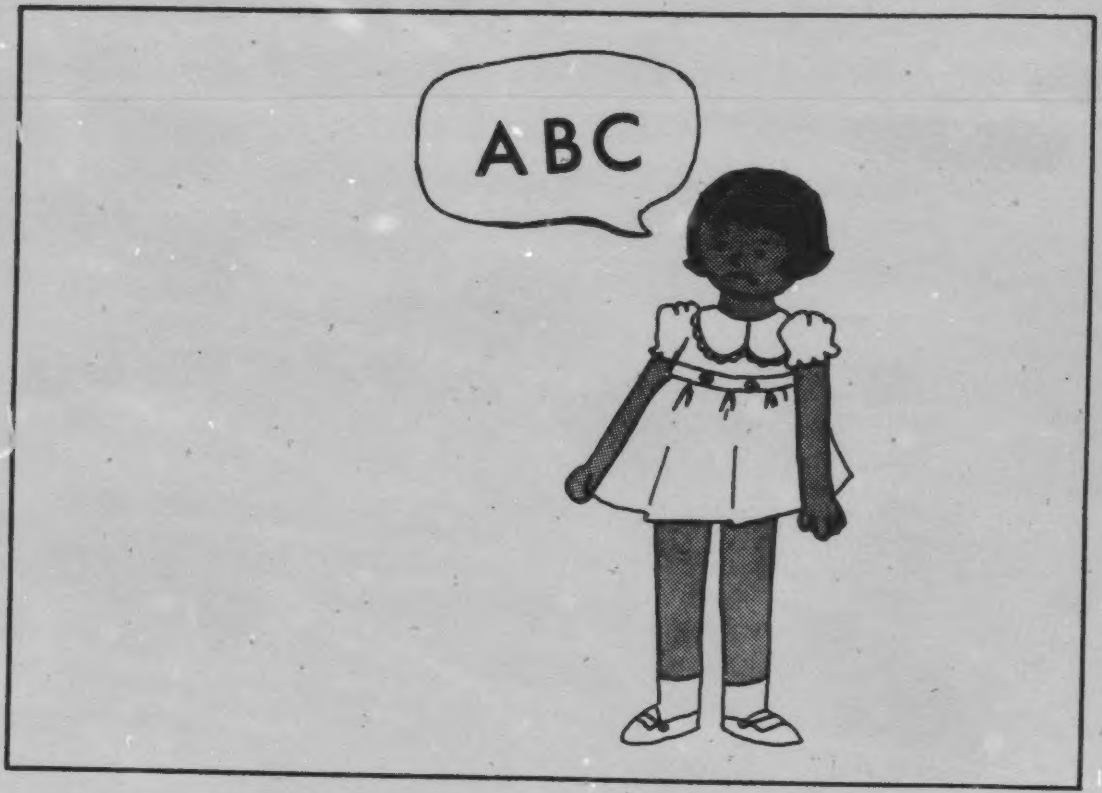
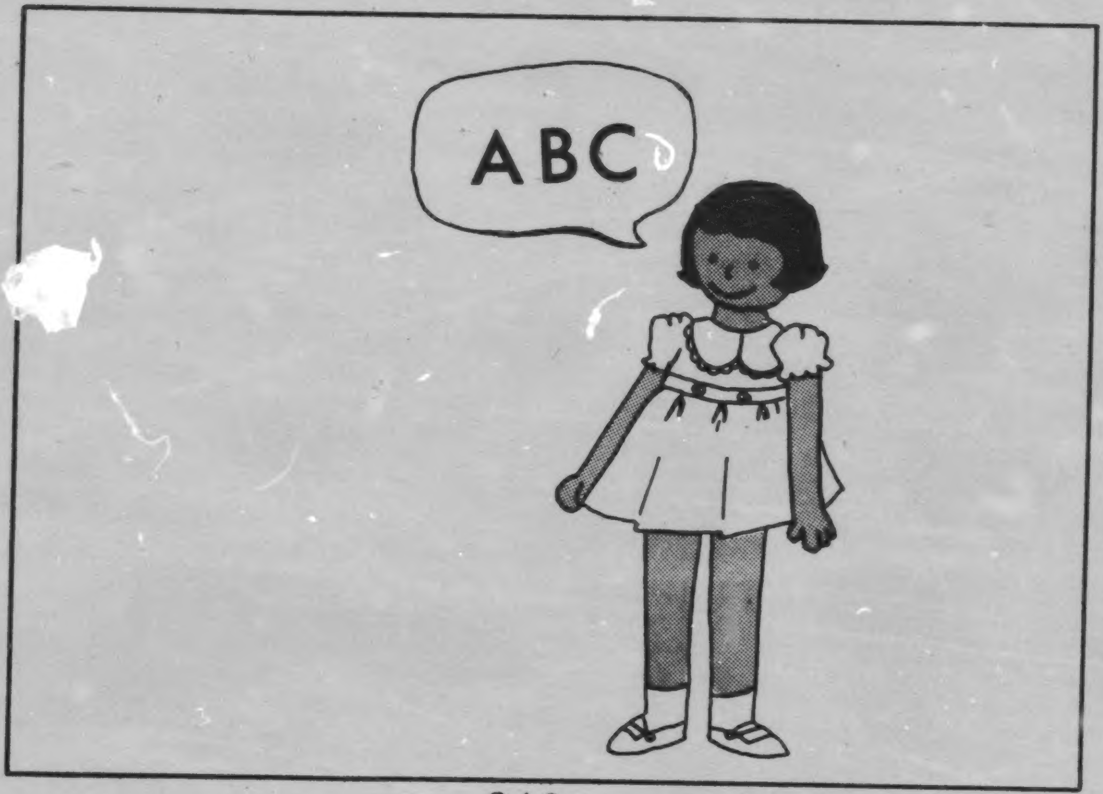
EXAMPLE 6: ATTITUDE TOWARD SCHOOL



HERE'S (child's name). ARE YOU SAD OR ARE YOU HAPPY WHEN YOU ARE SAYING THE ABC'S?



APPENDIX E

THE PRETEST PARENT QUESTIONNAIRE

PARENT QUESTIONNAIRE

For Tester Use Only

1	2	3	4	5	6

Child's ID No. City No.

7	8	9	10	11

Tester's ID No.

1. Your full name ____________________
first middle last

2. Your address ____________________
____

3. Your phone number ____________________

3a. Date ____________________
month day year

PART I

For ETS Use Only

4. Child's full name ____________________
first middle last

5. Your relationship to child. (Circle one number for your answer)

Mother..................	1	12
Other female............	2	12
Father..................	3	12
Other male..............	4	12

6. Child's date of birth ____________________ 15, 16
month day year 17, 18

7. Child's sex (Circle one number for your answer)

Male....................	1	19
Female..................	2	19

8. How many brothers and sisters does child have? (Write number)____ 20, 21

9. How does your child spend most of his time at home? (Circle 1 for Yes and 2 for No for each one)

	Yes	No	
Watches TV..........................	1	2	22
Plays with me.......................	1	2	23
Follows me around...................	1	2	24
Plays by himself....................	1	2	25
Plays with other children...........	1	2	26
Other: (Specify)________________	1	2	27

____

For ETS Use Only

10. About how much time is your child with you each day not including the time he sleeps? (Circle one number for your answer)

11 or more hours a day.....	1	28
8-10 hours.................	2	28
5-7 hours..................	3	28
2-4 hours..................	4	28
1 hour or less.............	5	28

11. What do you usually do when you are with your child? (Circle 1 for Yes and 2 for No for each one)

	Yes	No	
Play with him....................	1	2	29
Read to him......................	1	2	30
Do the housework (cooking or shopping)..................	1	2	31
Watch TV by myself...............	1	2	32
Watch TV with him................	1	2	33
Read by myself...................	1	2	34
Other: (Specify) ________________	1	2	35

____

12. How often does your child use such things as paper, crayons, or paints at home? (Circle one number for your answer)

Never......................	1	36
Less than once a week......	2	36
About once a week..........	3	36
Several times a week.......	4	36
At least once a day........	5	36
I don't know...............	6	36

13. How often is your child read to? (Circle one number)

Never......................	1	37
Less than once a week......	2	37
About once a week..........	3	37
Several times a week.......	4	37
At least once a day........	5	37
I don't know...............	6	37

For ETS Use Only

14. At what age do you expect your child to do these things? (Do not mark the ones he can do now.)

	4	3	2	1	
	can already do it	should be able to do at age			
		5 or 6	7 or 8	9 or more	
Undress himself					38
Dress himself					39
Tie his own shoes					40
Make his own bed					41
Cross the street himself					42
Go to the store himself					43
Say the alphabet					44
Count to twenty					45
Write his name					46
Write the numbers from 1 to 10					47
Read stories without your help					48

15. Does your child have his own: (Circle 1 for Yes and 2 for No for each one)

	Yes	No	
Room	1	2	49
Art things like crayons, paints, blackboard	1	2	50
Toys like puzzles, blocks, games	1	2	51
Books	1	2	52
Radio or phonograph	1	2	53
TV	1	2	54

For ETS
Use Only

16. How often does your child go to each of the things listed below? (Circle correct number for each place)

Circle 4 if your child goes often.
Circle 3 if your child goes sometimes.
Circle 2 if your child rarely goes.
Circle 1 if your child never goes.

	Often	Sometimes	Rarely	Never	For ETS Use Only
Summer Day Camp...	4	3	2	1	55
Public Library....	4	3	2	1	56
Playground........	4	3	2	1	57
Museum............	4	3	2	1	58
Live Theater (for plays or puppet shows)..........	4	3	2	1	59
Zoo...............	4	3	2	1	60
Movie Theater.....	4	3	2	1	61

17. Which of the following things do you have?

	Yes	No	For ETS Use Only
Automobile....................	1	2	62
Black and white TV set.........	1	2	63
Color TV set...................	1	2	64
Hi-fi or phonograph...........	1	2	65
Telephone.....................	1	2	66
Encyclopedia..................	1	2	67
Dictionary....................	1	2	68
Still or movie camera.........	1	2	69
Refrigerator..................	1	2	70
Oven..........................	1	2	71
Stove.........................	1	2	72
Dishwasher....................	1	2	73
Clothes Washer................	1	2	74
Clothes Dryer.................	1	2	75

18. What was the last grade in school that you completed? (Circle one number)

		For ETS Use Only
8th grade or less..............	1	76
Some high school...............	2	76
All of high school.............	3	76
Some college...................	4	76
College graduate or beyond.....	5	76
Other: (Specify) ______________ ______________________________	6	76

19. Are you employed outside the home full time (35 hours a week or more), part time (less than 35 hours a week), or not at all? (Circle one number)

Full time......................	1	77
Part time......................	2	77
Not employed...................	3	77

20. If you have a job, what kind of work do you do?

____

____

21. What was the last grade in school the male head of the household completed? (Circle one number)

8th grade or less..............	1	78
Some high school...............	2	78
All of high school.............	3	78
Some college...................	4	78
College graduate or beyond.....	5	78
Other: (Specify) ______________ ______________________________	6	78

22. Is he in school now? (Circle one number)

Yes..........	1	79
No...........	2	79

For ETS
Use Only

23. Is he employed full time or part time? (Circle one number)

Full time (35 hours or more a week).....	1	80
Part time (10-35 hours a wee-)...........	2	80
Part time (less than 10 hours a week)...	3	80

24. What is his job? What kind of work does he do?

____

____

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cols.

2 col.
12

25. How many times have you moved in the last three years? (Circle one number)

None..........................	1	13
Once..........................	2	13
Two-three times................	3	13
More than three times..........	4	13

26. How many years have you lived in this neighborhood? (Circle one number)

One or less....................	1	14
Two-three......................	2	14
Four-six.......................	3	14
More than six..................	4	14

27. How many rooms are there in this apartment or house? (Don't count bathrooms or other rooms too small for general living purposes.) (Circle one number)

One or two.....................	1	15
Three or four..................	2	15
Five or six....................	3	15
Seven or eight.................	4	15
More than eight................	5	15

28. How many people live in your home at the present time?

Write the number of people. ____________ 16, 17

		For ETS Use Only
29. Does your child go to school now? (Circle one number)		
No, my child is not in school now.....................	1 1	18
Yes, a kindergarten.............	2	18
Yes, a nursery school...........	3	18
Yes, a Head Start program.......	4	18
Yes, a day care center..........	5	18
Yes, Other: (Specify) __________ ________________________________	6	18
30. Did your child go to school last year? (Circle one number)		
No..............................	1	19
Yes, a kindergarten.............	2	19
Yes, a nursery school...........	3	19
Yes, a Head Start program.......	4	19
Yes, a day care center..........	5	19
Yes, Other: (Specify) __________ ________________________________	6	19
31. When did your child first start going to school?		
Month ______________		20, 21
Year _______________		22, 23

For ETS Use Only

Compared with other children, how successful do you think your child will be in school? (Circle the correct number for each question.)

Circle 1 if you think he will do better than most children
Circle 2 if you think he will do about average
Circle 3 if you think he will not do as well as most children
Circle 4 if you don't know or can't tell

	Better than most children	About average	Not as well as most children	Don't know or can't tell	For ETS Use Only
32. Compared with other children, how successful will your child be at getting used to school?...........	1	2	3	4	24
33. Compared with other children, how well do you think he will get along with the teacher?..........	1	2	3	4	25
34. Compared with other children, how well do you think he will get along with other children?.........	1	2	3	4	26
35. Compared with other children, how successful do you think he will be in his studies?.......	1	2	3	4	27
36. Compared with other children, how well do you think he will do at reading?..........	1	2	3	4	28
37. Compared with other children, how well do you think he will do at numbers?..........	1	2	3	4	29

38. If you could have your wish, what grade in school would you like him to complete? (Circle one number)

		For ETS Use Only
8th grade or less..............	1	30
Some high school...............	2	30
All of high school.............	3	30
Some college...................	4	30
College or beyond..............	5	30
Other: (Specify) ______________	6	30
______________________________		
Don't know.....................	7	30

39. Since things don't always turn out the way we want them to, how far do you think he will actually go in school? (Circle one number)

8th grade or less..............	1	31
Some high school...............	2	31
High school....................	3	31
Some college...................	4	31
College or beyond..............	5	31
Other: (Specify) ______________	6	31
______________________________		
Don't know.....................	7	31

40. In your opinion, what could prevent him from going as far as you would like him to go in school?

He will have to work to help support the family...........	1	32
He will want to earn his own money.......................	2	32
He won't have the ability to go any further.................	3	32
He will lose interest in school......................	4	32
I think he will go as far as I'd like him to in school....	5	32
Other: (Specify) ______________	6	
______________________________		32
Don't know.....................	7	32

For ETS Use Onl

41. Who do you think is usually to blame when a child does not work hard at school? (Circle the number of as many as apply)

Parents........................	1	33
Teachers.......................	2	34
The Child......................	3	35
The Child's friends............	4	36
Don't know.....................	5	37
Other: (Specify) ______________	6	38

____

42. Do you feel that most children have to be forced to learn? (Circle one number)

Almost all the time............	1	39
Most of the time...............	2	39
Sometimes......................	3	39
Never..........................	4	39

43. Do you feel that your child has to be forced to learn? (Circle one number)

Almost all the time............	1	40
Most of the time...............	2	40
Sometimes......................	3	40
Never..........................	4	40

44. Do you think that the teachers understand the problems faced by people in this community? (Circle one number)

Yes, they do...................	1	41
No, they don't.................	2	41
Don't know.....................	3	41

45. Do you think that there is anything that you can do to improve the schools in this neighborhood? (Circle one number)

Yes............................	1	42
No.............................	2	42
Don't know.....................	3	42

For ETS Use Only

46. Do you think the schools would be better or worse if you, as a parent, had more control over them? (Circle one number)

Better....................	1	43
About the same............	2	43
Worse.....................	3	43
Don't know................	4	43

47. About how many hours a day does your child usually watch television? (Circle one number)

Six or more hours..........	5	44
Four or five hours.........	4	44
Two or three hours.........	3	44
Less than two hours........	2	44
None.......................	1	44

48. About how many hours did your child watch TV yesterday? (Circle one num[illegible]

Six or more hours..........	5	45
Four or five hours.........	4	45
Two or three hours.........	3	45
Less than two hours........	2	45
None.......................	1	45

49. What kind of TV set does your child usually watch? (Circle one number)

Black and white............	1	46
Color......................	2	46

50. Does your child ever watch the local educational television channel? (Circle one number)

In Winston-Salem this is channel 4.
In Philadelphia this is channel 12.
In Boston this is channel 2.
In Durham this is channel 4.
In Phoenix this is channel 8.
In Dallas this is channel 13
In Los Angeles this is channel 28.
In Abilene this is channel 13.

Yes.................	1	47
No..................	2	47
I don't know........	3	47

For ETS
Use Onl

51. Which of the following TV shows does your child watch?
(Circle the correct number for each show)

Circle 1 if he watches it almost every day
Circle 2 if he watches it sometimes
Circle 3 if he rarely or never watches it

Beverly Hillbillies..............	1	2	3	48
Betwitched......................	1	2	3	49
Captain Kangaroo.................	1	2	3	50
Flintstones.....................	1	2	3	51
Leave It To Beaver...............	1	2	3	52
Misterogers Neighborhood..........	1	2	3	53
Romper Room......................	1	2	3	54
Sesame Street....................	1	2	3	55
Superman.........................	1	2	3	56
The Lucy Show (I Love Lucy)......	1	2	3	57

For ETS
Use Only

PART II

52. Does your child ever watch the TV show Sesame Street? If you don't know, please feel free to ask your child. (Circle one number)

		For ETS Use Only
Yes....................	1	58
No.....................	2	58

> If you circled 1 (yes) to question 52., please go next to question 53. If you circled 2 (no) to question 52, you have completed this questionnaire.
>
> Thank you for your cooperation.

53. About how many times a week does your child watch Sesame Street? (Check one of these answers)

		For ETS Use Only
More than 5 times a week (more than once a day).......	______	59
4 or 5 times a week...........	______	59
2 or 3 times a week...........	______	59
0 or 1 time a week............	______	59
I don't know..................	______	59

54. About how much of each Sesame Street show does he usually watch? (Circle one number)

		For ETS Use Only
Almost all of it.......	1	60
About half of it.......	2	60
Very little of it......	3	60
I don't know...........	4	60

55. Do you ever watch Sesame Street with your child? (Circle one number)

		For ETS Use Only
Almost always..........	1	61
Usually................	2	61
Sometimes..............	3	61
Hardly ever............	4	61

For ETS Use Only

56. Do you and your child ever talk about Sesame Street either when the show is on or after it is over? (Circle one number)

Almost always.......... 1 62
Usually................ 2 62
Sometimes.............. 3 62
Hardly ever............ 4 62

57. Does your child ever play games based on Sesame Street? (For example, does he pretend he is one of the people on Sesame Street?) (Circle one number)

Almost always.......... 1 63
Usually................ 2 63
Sometimes.............. 3 63
Hardly ever............ 4 63
I don't know........... 5 63

58. When your child watches Sesame Street how interested does he seem to be when the following things are on? (Circle one number)

Circle 1 if your child seems not interested
Circle 2 if your child seems somewhat interested
Circle 3 if your child seems very interested
Circle 4 if you don't know or can't tell

	Not Interested	Somewhat Interested	Very Interested	Don't know or can't tell	
People....	1	2	3	4	64
Puppets...	1	2	3	4	65
Cartoons..	1	2	3	4	66
Animals...	1	2	3	4	67
Films.....	1	2	3	4	68

59. In your opinion how helpful has Sesame Street been for your child? (Circle one number)

Not helpful at all..... 1 69
Somewhat helpful....... 2 69
Very helpful........... 3 69
I don't know........... 4 69

	For ETS Use Only
60. On which kind of television does your child usually watch Sesame Street? (Circle one number)	
Black and white........ 1	70
Color.................. 2	70
61. If you have anything you would like to say about the show Sesame Street, please do so below. Specific examples would	
____	71
____	
____	

APPENDIX F

THE POSTTEST PARENT QUESTIONNAIRE

PARENT QUESTIONNAIRE

For Tester Use Only

1	2	3	4	5	6

Child's ID No. City No.

7	8	9	10	11
			0	2

Tester's ID No.

1. Your full name ______________________________
first middle last

2. Your address ______________________________
____

3. Your phone number ______________________________

3a. Today's date ______________________________
month day year

PART I

4. Child's full name ______________________________ 1 col.12
first middle last

5. Your relationship to child. (Circle one number for your answer)

		For ETS Use Only
Mother..................	1	13
Other female............	2	13
Father..................	3	13
Other male..............	4	13

[cols. 14-21 blank]

6. How does your child spend most of his time at home? (Circle 1 for Yes and 2 for No for each one)

	Yes	No	
Watches TV........................	1	2	22
Plays with me.....................	1	2	23
Follows me around.................	1	2	24
Plays by himself..................	1	2	25
Plays with other children.........	1	2	26
Other: (Specify) ________________	1	2	27

____

For ETS Use Only

7. About how much time is your child with you each day not including the time he sleeps? (Circle one number for your answer)

11 or more hours a day.....	1	28
8-10 hours.................	2	28
5-7 hours..................	3	28
2-4 hours..................	4	28
1 hour or less.............	5	28

8. What do you usually do when you are with your child? (Circle 1 for Yes and 2 for No for each one)

	Yes	No	
Play with him....................	1	2	29
Read to him......................	1	2	30
Do the housework (cooking or shopping)..................	1	2	31
Watch TV by myself...............	1	2	32
Watch TV with him................	1	2	33
Read by myself...................	1	2	34
Other: (Specify) ________________	1	2	35

____

9. How often does your child use such things as paper, crayons, or paints at home? (Circle one number for your answer)

Never......................	1	36
Less than once a week......	2	36
About once a week..........	3	36
Several times a week.......	4	36
At least once a day........	5	36
I don't know...............	6	36

10. How often is your child read to? (Circle one number)

Never......................	1	37
Less than once a week......	2	37
About once a week..........	3	37
Several times a week.......	4	37
At least once a day........	5	37
I don't know...............	6	37

For ETS
Use Only

11. At what age do you expect your child to do these things?

	4	3	2	1	
	can al-ready do it	should be able to do at age			
		5 or 6	7 or 8	9 or more	
Undress himself					38
Dress himself					39
Tie his own shoes					40
Make his own bed					41
Cross the street himself					42
Go to the store himself					43
Say the alphabet					44
Count to twenty					45
Write his name					46
Write the numbers from 1 to 10					47
Read stories without your help					48

12. Does your child have his own: (Circle 1 for Yes and 2 for No for each one)

	Yes	No	
Room........	1	2	49
Art things like crayons, paints, blackboard...	1	2	50
Toys like puzzles, blocks, games.............	1	2	51
Books.................................	1	2	52
Radio or phonograph.........................	1	2	53
TV....................................	1	2	54

For ETS Use Only

13. How often does your child go to each of the things listed below? (Circle correct number for each place)

Circle 4 if your child goes often.
Circle 3 if your child goes sometimes.
Circle 2 if your child rarely goes.
Circle 1 if your child never goes.

	Often	Sometimes	Rarely	Never	
Summer Day Camp...	4	3	2	1	55
Public Library....	4	3	2	1	56
Playground........	4	3	2	1	57
Museum............	4	3	2	1	58
Live Theater (for plays or puppet shows)..........	4	3	2	1	59
Zoo...............	4	3	2	1	60
Movie Theater.....	4	3	2	1	61

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[cols.13-17 blank]

14. Does your child go to school now? (Circle one number)

No, my child is not in school now....................	1	18
Yes, a kindergarten.............	2	18
Yes, a nursery school...........	3	18
Yes, a Head Start program.......	4	18
Yes, a day care center..........	5	18
Yes, Other: (Specify)__________	6	18

____

[col. 19 blank]

15. When did your child first start going to school?

Month ______________ 20, 21
Year ______________ 22, 23

Compared with other children, how successful do you think your child will be in school? (Circle the correct number for each question.)

Circle 1 if you think he will do better than most children
Circle 2 if you think he will do about average
Circle 3 if you think he will not do as well as most children
Circle 4 if you don't know or can't tell

	Better than most children	About average	Not as well as most children	Don't know or can't tell	For ETS Use Only
16. Compared with other children, how successful will your child be at getting used to school?............	1	2	3	4	24
17. Compared with other children, how well do you think he will get along with the teacher?...........	1	2	3	4	25
18. Compared with other children, how well do you think he will get along with other children?..........	1	2	3	4	26
19. Compared with other children, how successful do you think he will be in his studies?.......	1	2	3	4	27
20. Compared with other children, how well do you think he will do at reading?...........	1	2	3	4	28
21. Compared with other children, how well do you think he will do at numbers?...........	1	2	3	4	29

For ETS Use Only

22. If you could have your wish, what grade in school would you like him to complete? (Circle one number)

8th grade or less..............	1	30
Some high school...............	2	30
All of high school.............	3	30
Some college...................	4	30
College or beyond..............	5	30
Other: (Specify) ______________	6	30
________________________________		
Don't know.....................	7	30

23. Since things don't always turn out the way we want them to, how far do you think he will actually go in school? (Circle one number)

8th grade or less..............	1	31
Some high school...............	2	31
High school....................	3	31
Some college...................	4	31
College or beyond..............	5	31
Other: (Specify) ______________	6	31
________________________________		
Don't know.....................	7	31

24. In your opinion, what could prevent him from going as far as you would like him to go in school?

He will have to work to help support the family...........	1	32
He will want to earn his own money......................	2	32
He won't have the ability to go any further.................	3	32
He will lose interest in school......................	4	32
I think he will go as far as I'd like him to in school....	5	32
Other: (Specify) ______________	6	
________________________________		32
Don't know.....................	7	32

For ETS Use Only

25. Who do you think is usually to blame when a child does not work hard at school? (Circle the number of as many as apply)

Parents	1	33
Teachers	2	34
The Child	3	35
The Child's friends	4	36
Don't know	5	37
Other: (Specify) ____________	6	38

____

26. Do you feel that most children have to be forced to learn? (Circle one number)

Almost all the time	1	39
Most of the time	2	39
Sometimes	3	39
Never	4	39

27. Do you feel that your child has to be forced to learn? (Circle one number)

Almost all the time	1	40
Most of the time	2	40
Sometimes	3	40
Never	4	40

28. Do you think that the teachers understand the problems faced by people in this community? (Circle one number)

Yes, they do	1	41
No, they don't	2	41
Don't know	3	41

29. Do you think that there is anything that you can do to improve the schools in this neighborhood? (Circle one number)

Yes	1	42
No	2	42
Don't know	3	42

30. Do you think the schools would be better or worse if you, as a parent, had more control over them? (Circle one number)

		For ETS Use Only
Better	1	43
About the same	2	43
Worse	3	43
Don't know	4	43

31. About how many hours a day does your child usually watch television? (Circle one number)

		For ETS Use Only
Six or more hours	5	44
Four or five hours	4	44
Two or three hours	3	44
Less than two hours	2	44
None	1	44

32. About how many hours did your child watch TV yesterday? (Circle one number)

		For ETS Use Only
Six or more hours	5	45
Four or five hours	4	45
Two or three hours	3	45
Less than two hours	2	45
None	1	45

33. What kind of TV set does your child usually watch? (Circle one number)

		For ETS Use Only
Black and white	1	46
Color	2	46

34. Does your child ever watch the local educational television channel? (Circle one number)

In Winston-Salem this is channel 4.
In Philadelphia this is channel 12.
In Boston this is channel 2.
In Durham this is channel 4.
In Phoenix this is channel 8.
In Dallas this is channel 13
In Los Angeles this is channel 28.
In Abilene this is channel 13.

		For ETS Use Only
Yes	1	47
No	2	47
I don't know	3	47

35. Which of the following TV shows does your child watch? (Circle the correct number for each show)

Circle 1 if he watches it almost every day
Circle 2 if he watches it sometimes
Circle 3 if he rarely or never watches it

				For ETS Use Only
Beverly Hillbillies	1	2	3	48
Betwitched	1	2	3	49
Captain Kangaroo	1	2	3	50
Flintstones	1	2	3	51
Leave It To Beaver	1	2	3	52
Misterogers Neighborhood	1	2	3	53
Romper Room	1	2	3	54
Sesame Street	1	2	3	55
Superman	1	2	3	56
The Lucy Show (I Love Lucy)	1	2	3	57

For ETS
Use Only

PART II

36. Does your child ever watch the TV show Sesame Street? If you don't know, please feel free to ask your child. (Circle one number)

Yes....................	1	58
No.....................	2	58

> If you circled 1 (yes) to question 52., please go next to question 53. If you circled 2 (no) to question 52, you have completed this questionnaire.
>
> Thank you for your cooperation.

37. About how many times a week does your child watch Sesame Street? (Check one of these answers)

More than 5 times a week (more than once a day).......	______	59
4 or 5 times a week...........	______	59
2 or 3 times a week...........	______	59
0 or 1 time a week............	______	59
I don't know..................	______	59

38. About how much of each Sesame Street show does he usually watch? (Circle one number)

Almost all of it.......	1	60
About half of it.......	2	60
Very little of it......	3	60
I don't know...........	4	60

39. Do you ever watch Sesame Street with your child? (Circle one number)

Almost always..........	1	61
Usually................	2	61
Sometimes..............	3	61
Hardly ever............	4	61

For ETS Use Only

40. Do you and your child ever talk about Sesame Street either when the show is on or after it is over? (Circle one number)

Almost always..........	1	62
Usually................	2	62
Sometimes..............	3	62
Hardly ever............	4	62

41. Does your child ever play games based on Sesame Street? (For example, does he pretend he is one of the people on Sesame Street?) (Circle one number)

Almost always..........	1	63
Usually................	2	63
Sometimes..............	3	63
Hardly ever............	4	63
I don't know...........	5	63

42. When your child watches Sesame Street how interested does he seem to be when the following things are on? (Circle one number)

Circle 1 if your child seems not interested

Circle 2 if your child seems somewhat interested

Circle 3 if your child seems very interested

Circle 4 if you don't know or can't tell

	Not Interested	Somewhat Interested	Very Interested	Don't know or can't tell	
People....	1	2	3	4	64
Puppets...	1	2	3	4	65
Cartoons..	1	2	3	4	66
Animals...	1	2	3	4	67
Films.....	1	2	3	4	68

43. In your opinion how helpful has Sesame Street been for your child? (Circle one number)

Not helpful at all.....	1	69
Somewhat helpful.......	2	69
Very helpful...........	3	69
I don't know...........	4	69

	For ETS Use Only
44. On which kind of television does your child usually watch Sesame Street? (Circle one number)	
Black and white........ 1	70
Color.................. 2	70
45. If you have anything you would like to say about the show Sesame Street, please do so below. Specific examples would be appreciated.	[cols. 71-80 blank]

____

____

____

APPENDIX G

VIEWING RECORD

VIEWING RECORD

Name of Child ______________________

Address ____________________________

1 2 3 4
Child ID ☐ ☐ ☐ ☐

5 6
City ☐ ☐

7 8 9
Tester ID ☐ ☐ ☐

10
[ETS use only] ☐

Directions

Please write a 1 next to every TV show your child watches on ______________ (day of week), ______________ (month), ______________ (day). Some TV shows are shown more than once a day. Write a 2 next to any show your child watches twice; write a 3 next to any show your child watches three times, etc. Leave blank any shows he doesn't watch. Check NONE if he doesn't watch any TV that day.

If he watches shows not listed, write them in the space labeled OTHER. If you are unsure which shows your child watches that day, please ask your child.

______________ NONE (check if no TV watched)

Number Times Watched

______________ Batman
______________ Beverly Hillbillies
______________ Bewitched
______________ Captain Kangaroo
______________ Flintstones
______________ Gilligan's Island
______________ Julia

Number Times Watched

______________ Lucy Show (I Love Lucy)
______________ Major Mudd
______________ Misterogers
______________ Popeye
______________ Romper Room
______________ Sesame Street
______________ Speed Racer
______________ Wallace and Company

OTHER: (Please list and put number of times watched.)

______________ ______________________________
______________ ______________________________
______________ ______________________________
______________ ______________________________
______________ ______________________________

APPENDIX H

THE CONTENT ANALYSIS

Sesame Street II

Symbolic Representations

- 01. Counting to 20
      - Pre-reading Goals
      - 02. Letters
      - 03. Matching of letters
      - 04. Recognition of letters
      - 05. Labeling letters
      - 06. Letter sounds
         - 07. Sustaining consonants (f, l, m, n, r, s, v) sounds
         - 08. Letter associated with initial sound
         - 09. Words beginning with same initial sound
      - 10. Alphabet recitation
   - 11. Words
      - 12. Matching words
      - 13. Counting number of words in a sentence
      - 14. Words and sentences read from left to right
         - 15. First and last letter of word
         - 16. First and last word of sentence
   - 17. Decoding by substituting initial sounds
      - 18. Word recognition (of word list)

Numbers 1-20

- 19. Matching numbers
- 20. Recognition of numbers
- 21. Labeling numbers
- 22. Reciting numbers 1-20
   - 23. Reciting numbers within 1-20

Numerical Operations

- 24. Enumeration (defining subsets) Counting
   - 25. Last number reached is total number in group
   - 26. Counting strategies
- 27. Equality (balancing equations)
   - 28. Conservation (match sets of equal numbers)
   - 29. Numeral/number correspondence
- 30. Addition and subtraction

31. Geometric forms

    32. Matching forms
    33. Recognition of forms
    34. Labeling forms

Cognitive Operations

Perceptual discrimination and orientation

35. Visual discrimination

    36. Matching objects by form, size, or position
    37. Embedded figures
    38. Part/whole relationships

39. Auditory discrimination

    40. Sound identification of objects or animils
    41. Rhythms
    42. Rhyming words

43. Subjective/objective discrimination of an object

Pelational concepts

    44. Same/different
    45. Size
    46. Quantity
    47. Position
    48. Distance
    49. Time

Classification

50. Sorting

    51. Size
    52. Form
    53. Function
    54. Class
    55. Quantity

56. Classifying

    57. Size
    58. Form
    59. Function
    60. Class
    61. Quantity

62. Spanish Vocabulary

Multiple classification

63. Property identification of objects
64. Multiple class inclusion and differentiation
65. Regrouping
    66. Classify by more than one characteristic
    67. Classify by one characteristic and then another

68. Reasoning and problem solving
    69. Inferences
        70. Inferring antecedent events
        71. Inferring consequent events
    72. Generating explanations and solutions
    73. Evaluating explanations and solutions

The Child and His Word

Self

74. The mind and its powers
75. Body parts and functions
76. Kinesthetic participation
77. Emotions (recognize and label)

Social Units

78. Roles and functions of family and community members
79. Social groups and institutions
    80. Family and home
    81. Neighborhood
    82. City or town

83. Social Interactions
    84. Differing perspectives
    85. Cooperation
        86. Division of labor
        87. Combining skills
        88. Reciprocity
        89. Conflict resolution
    90. The man-made environment
        91. Machines and tools
        92. Buildings and other structures

Natural environment

93. Land, sky and water
94. City and country
95. Plants and animals
96. Natural processes and cycles
97. Entertainment
98. Limbo
99. Different educational goal

00	live (on the set)
10	film
20	song on set
30	film and song
40	photograph or drawings
50	photograph or drawing with song

01	people
02	muppets
03	animals
04	animation
05	people and muppets
06	people and animals
07	people, muppets, and animals

Date of Show ______________________

Show Number ______________________

In the top half of each square, a number was recorded indicating the objective and in the bottom half the number indicating the technique being used at that time. This was done every 30 seconds.

half minutes 5 minute intervals	00	01	02	03	04	05	06	07	08	09
1st 5 mins.										
2nd 5 mins.										
3rd 5 mins.										
4th 5 mins.										
5th 5 mins.										
6th 5 mins.										
7th 5 mins.										
8th 5 mins.										
9th 5 mins.										
10th 5 mins.										
11th 5 mins.										
12th 5 mins.										

APPENDIX I

THE TEACHER QUESTIONNAIRE

TEACHER QUESTIONNAIRE

As a follow-up to a study of children's television viewing behavior, we are asking a selected group of kindergarten teachers to make judgments concerning the status of their students with respect to readiness for school. On the pages that follow, you will be asked to rank order all of the students in your class according to certain characteristics. We are interested in your candid judgments; these rankings will not become part of the students' records, nor will they be used for purposes other than those of the present research.

First, please complete items 1 through 6 below. The information you provide here is necessary to us for identification purposes.

1. Your full name ______________________________
   first middle last
2. School ____________________ 3. Class ______________
4. Years' Teaching Experience Prior to this Year ____________
5. Number of children in class __________
6. Would you consider the students in this class to be more or less ready for school than students you have taught in the past, or about the same? (Circle one number for your answer.)

More ready................1

About the Same............2

Less ready................3

Next, you will need a complete list of the children in your class. We would like you to assign a number to each child, starting with "1" and ending with the number of children in your class. Please attach the list to this questionnaire when you have finished with it.

On page 2 of the questionnaire, we would like you to rank order the students in your class according to the degree to which you feel they are generally ready for school. First, decide which student you consider to be the most ready in general terms. Write his number in the box marked 1. Next, choose the student who is second in your judgment in terms of general readiness for school. Enter his number in box 2. Next, choose the third most ready student and write his number in box 3. Continue in this manner until all of the students have been listed by number ending with the one you feel is generally least ready for school.

1. General Readiness

Most ready	1.	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	
	8.	
	9.	
	10.	
	11.	
	12.	
	13.	
	14.	
	15.	

16.		
17.		
18.		
19.		
20.		
21.		
22.		
23.		
24.		
25.		
26.		
27.		
28.		
29.		
30.		Least ready

In the pages that follow you will find six more phrases, each of which represents some component of school readiness. We would like you to rank order the children in your class according to each of the dimensions named. The procedure to be followed is the same as the one you followed in rank ordering for general readiness. All of the children in the class should be listed by the numbers that you assigned. Please try to rank the children on each component independently of how you rank them on every other component. That is, for each component, ask yourself a series of questions: "Which child in my class is most ready for first grade in terms of verbal skills and understandings?" "Which child in my class is most ready for first grade in terms of quantitative skills and understandings?" And so on. In order to aid you in defining the dimensions, some examples of each are given.

2. Verbal Skills and Understandings

(ability to match, recognize and label letters, produce letter sounds, recite the alphabet; ability to match and recognize words)

Most ready

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

16.	
17.	
18.	
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	
29.	
30.	

Least ready

3. Quantitative Skills and Understandings

(ability to match, recognize and label numbers, recite numbers from 1 to 20; ability to perform some number operations such as addition and subtraction; ability to recognize and label geometric forms)

Most ready

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

16.	
17.	
18.	
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	
29.	
30.	

Least ready

4. General Intellectual Functioning

(quality of visual and auditory discrimination; ability to match objects on the basis of form, size or position; understands part/whole relationships; understanding of relational concepts such as same/different; none/some/all; ability to sort and classify on the basis of size, form, function, class, quantity; ability to reason and solve problems)

Most ready

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

16.	
17.	
18.	
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	
29.	
30.	

Least ready

5. Attitudes Toward School and School Work

Most ready

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

16.	
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18.	
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	
29.	
30.	

Least ready

6. Peer Relationships

(ability to cooperate and resolve conflicts; ability to recognize differing perspectives; degree of awareness of values, feelings, preferences, modes of behavior of others)

Most ready	1.		16.		
	2.		17.		
	3.		18.		
	4.		19.		
	5.		20.		
	6.		21.		
	7.		22.		
	8.		23.		
	9.		24.		
	10.		25.		
	11.		26.		
	12.		27.		
	13.		28.		
	14.		29.		
	15.		30.		**Least ready**

7. Motor Coordination and Physical Condition

Most ready	1.	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	
	8.	
	9.	
	10.	
	11.	
	12.	
	13.	
	14.	
	15.	

16.		
17.		
18.		
19.		
20.		
21.		
22.		
23.		
24.		
25.		
26.		
27.		
28.		
29.		
30.		Least ready

8. Cooperation with other students.

Most ready

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

16.	
17.	
18.	
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	
29.	
30.	

Least ready

APPENDIX J

CORRELATIONS OF PRETEST AND GAINS FOR NEW CHILDREN AND FOR ENCOURAGED NEW STUDY CHILDREN

The reference numbers on the correlation tables refer to the 42 test scores and the SES Index as follows:

1. Naming Body Parts
2. Function of Body Parts
3. Total
4. Naming Forms
5. Recognizing Forms
6. Total
7. Roles of Community Members
8. Matching by Form
9. Matching by Position
10. Recognizing Letters
11. Naming Letters
12. Letter Sounds
13. Initial Sounds
14. Decoding
15. Reading
16. Left-right Orientation
17. Alphabet
18. Pre-reading Total
19. Recognizing Numbers
20. Naming Numbers
21. Enumeration
22. Conservation
23. Counting Strategies
24. Number/Numeral Correspondence
25. Addition and Subtraction
26. Counting 1-30
27. Numbers Total
28. Relational Terms
29. Classification
30. Double Classification
31. Classification Total
32. Sorting Total
33. Parts/Whole Relationships
34. Emotions
35. Attitude to School
36. Attitude to Others
37. Attitude to Race of Others
38. Peabody Raw Score
39. Peabody Mental Age
40. Peabody IQ
41. Sesame Street Test, 1-10
42. Grand Total
43. SES Index

SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP

MATRIX OF N'S

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
2	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
3	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
4	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
5	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
6	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
7	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
8	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
9	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
10	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
11	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
12	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
13	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
14	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
15	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
16	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
17	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
18	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
19	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
20	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
21	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
22	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
23	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
24	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
25	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
26	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
27	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
28	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
29	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
30	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
31	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
32	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
33	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
34	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
35	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.
36	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.
37	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.
38	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
39	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
40	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
41	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
42	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.
43	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.

SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP

MATRIX OF N'S

	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
1	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
2	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
3	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
4	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
5	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
6	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
7	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55	55.	55.	283.	283.	283.	283.	283.
8	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
9	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
10	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
11	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
12	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
13	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
14	283.	283.	283.	283.	283.	283.	283	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
15	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
16	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
17	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
18	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
19	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
20	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
21	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
22	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
23	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
24	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
25	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
26	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
27	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
28	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
29	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
30	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
31	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
32	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
33	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
34	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
35	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	55.	55.	55.	78.	78.	78.	78.	78.
36	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	55.	55.	55.	78.	78.	78.	78.	78.
37	78.	78.	78.	78.	78.	78.	78.	78.	78.	78.	55.	55.	55.	78.	78.	78.	78.	78.
38	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
39	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
40	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
41	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
42	283.	283.	283.	283.	283.	283.	283.	283.	283.	283.	55.	55.	55.	283.	283.	283.	283.	283.
43	275.	275.	275.	275.	275.	275.	275.	275.	275.	275.	55.	55.	55.	275.	275.	275.	275.	275.

SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP

	1	2	3	4	5	6	7	8	9	10	11
1	-0.8035	-0.3112	-0.6710	-0.2327	-0.1432	-0.2267	-0.2563	-0.2635	-0.0174	-0.1006	0.0350
2	-0.4495	-0.6310	-0.6176	-0.1990	-0.1691	-0.2249	-0.2949	-0.2934	-0.0286	-0.1122	0.0238
3	-0.7164	-0.5079	-0.7204	-0.2422	-0.1725	-0.2516	-0.3049	-0.3086	-0.0250	-0.1179	0.0333
4	-0.2958	-0.2728	-0.3309	-0.5525	-0.1889	-0.4377	-0.2962	-0.1194	-0.0465	-0.0409	0.0313
5	-0.2108	-0.1261	-0.1996	-0.1624	-0.6519	-0.5255	-0.2480	-0.1058	-0.0124	-0.0582	0.0942
6	-0.2926	-0.2287	-0.3055	-0.4075	-0.4976	-0.5612	-0.3151	-0.1305	-0.0335	-0.0579	0.0741
7	-0.3210	-0.2307	-0.3244	-0.1727	-0.1537	-0.1998	-0.6849	-0.1771	-0.0246	-0.0919	0.0308
8	-0.3428	-0.2656	-0.3567	-0.1803	-0.1269	-0.1863	-0.2595	-0.6692	-0.1425	-0.0935	-0.0235
9	-0.0825	-0.0844	-0.0967	-0.0659	0.0245	-0.0209	-0.0993	-0.2526	-0.6900	-0.0592	0.0230
10	-0.1943	-0.1761	-0.2157	-0.1403	-0.0164	-0.0901	-0.2009	-0.1477	-0.0345	-0.6139	-0.0795
11	-0.1202	-0.0858	-0.1212	-0.0340	-0.0095	-0.0255	-0.1113	-0.0771	0.0520	-0.1088	-0.2084
12	-0.1251	-0.0738	-0.1179	-0.0537	0.0167	-0.0192	-0.1010	-0.0443	0.0578	-0.1207	-0.2018
13	-0.1017	-0.1349	-0.1355	-0.0601	0.0127	-0.0255	-0.0453	-0.0256	0.0175	-0.0438	0.0425
14	-0.1421	-0.1848	-0.1674	-0.0914	-0.0175	-0.0632	-0.1771	-0.1845	0.0383	-0.1300	-0.0855
15	-0.1475	-0.1516	-0.1733	-0.0233	-0.0783	-0.0653	-0.2039	-0.1538	0.0218	-0.1194	-0.0838
16	-0.0771	-0.0477	-0.0739	0.0400	0.0141	0.0320	0.0292	-0.0272	0.0027	-0.1219	0.0727
17	-0.1070	-0.0617	-0.1001	0.0129	0.0074	0.0122	-0.1133	-0.0107	0.0301	-0.1219	0.0214
18	-0.2390	-0.2236	-0.2691	-0.0995	-0.0508	-0.0900	-0.2102	-0.2606	0.0065	-0.2491	-0.1027
19	-0.1075	-0.1421	-0.1430	-0.0017	-0.0213	-0.0151	-0.2176	-0.1403	0.0248	-0.2197	0.0182
20	-0.0935	-0.1187	-0.1218	-0.0915	0.0516	-0.0173	-0.0876	-0.0598	0.0948	-0.0499	-0.1125
21	-0.1470	-0.0557	-0.1221	0.0121	0.0385	0.0325	-0.0798	-0.0299	-0.0236	-0.0593	0.0172
22	-0.1259	-0.1274	-0.1468	-0.0509	0.0079	-0.0235	-0.1222	-0.2247	-0.0305	-0.0821	0.0181
23	-0.1589	-0.0463	-0.1246	0.0450	-0.0557	-0.0117	-0.0533	-0.0193	-0.0018	-0.0757	0.0203
24	-0.1057	-0.1225	-0.1315	-0.0118	0.0079	-0.0014	-0.0905	-0.1504	-0.1013	-0.0839	-0.0068
25	-0.1737	-0.1335	-0.1802	0.0004	-0.0128	-0.0083	-0.1513	-0.0634	-0.0160	-0.0501	0.0851
26	-0.1803	-0.1525	-0.1944	-0.0213	0.0021	-0.0109	-0.1760	0.0515	0.0246	-0.0843	0.0092
27	-0.2115	-0.1594	-0.2177	-0.0377	-0.0005	-0.0216	-0.1712	-0.1715	-0.0426	-0.1389	0.0037
28	-0.3601	-0.2872	-0.3790	-0.2332	-0.1843	-0.2543	-0.3279	-0.2953	-0.0360	-0.1043	-0.0275
29	-0.2155	-0.1787	-0.2304	-0.0741	-0.0629	-0.0837	-0.2249	-0.1867	0.0166	-0.1830	0.0493
30	-0.0658	-0.1222	-0.1062	-0.0435	-0.0379	-0.0498	-0.1578	-0.1229	0.0231	-0.1659	-0.0041
31	-0.1847	-0.1805	-0.2120	-0.0720	-0.0615	-0.0815	-0.2288	-0.1866	0.0215	-0.2013	0.0345
32	-0.2539	-0.2097	-0.2710	-0.2601	-0.0791	-0.1995	-0.3301	-0.2053	0.0227	-0.1741	-0.0428
33	-0.0639	-0.0897	-0.0878	-0.0310	0.0229	-0.0023	-0.0885	-0.0808	-0.0463	-0.1171	0.0348
34	-0.0650	0.0466	-0.0162	-0.0328	0.0967	0.0458	-0.0432	-0.1573	-0.0733	-0.0168	0.0080
35	-0.2864	-0.0883	-0.2273	-0.0820	0.0990	0.0214	-0.1382	-0.0951	0.0034	0.0056	0.1325
36	-0.2310	0.1484	-0.0536	0.1043	0.0360	0.0820	-0.0554	-0.0074	0.1399	0.1815	0.2153
37	-0.1694	-0.0346	-0.1240	-0.0588	0.0987	0.0340	-0.1038	-0.1680	-0.0270	0.0485	-0.0588
38	-0.2298	-0.1554	-0.2271	-0.1151	-0.0427	-0.0934	-0.2721	-0.1782	-0.0650	-0.1095	0.0469
39	-0.1818	-0.1350	-0.1860	-0.0839	-0.0166	-0.0584	-0.2332	-0.1374	-0.0360	-0.0640	0.0591
40	-0.1774	-0.1495	-0.1909	-0.1671	-0.0308	-0.1148	-0.2349	-0.1773	-0.0566	-0.0965	-0.0685
41	0.0621	-0.0673	0.0034	-0.0650	-0.0562	-0.0741	0.0587	-0.0706	0.0060	-0.0230	-0.1026
42	-0.3906	-0.3014	-0.4058	-0.1904	-0.1204	-0.1876	-0.3326	-0.2935	-0.0465	-0.1917	-0.0044
43	-0.2037	-0.1294	-0.1969	-0.1012	-0.0205	-0.0707	-0.0742	-0.1610	-0.0013	-0.0354	-0.0006

SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP

	12	13	14	15	16	17	18	19	20	21	22
1	-0.0142	-0.1308	-0.1294	-0.0351	-0.0886	0.0489	-0.1304	-0.0268	-0.0389	-0.1506	-0.1224
2	-0.0199	-0.1561	-0.2381	-0.0588	-0.0879	-0.0468	-0.1836	-0.0566	-0.0344	-0.0921	-0.0696
3	-0.0187	-0.1584	-0.1990	-0.0511	-0.0983	0.0062	-0.1721	-0.0449	-0.0411	-0.1383	-0.1097
4	0.0470	-0.0592	-0.0470	-0.0145	-0.1081	0.0964	-0.0503	0.0563	-0.0947	-0.1599	0.0041
5	0.0647	-0.0134	-0.0121	0.0475	-0.0419	0.0488	0.0091	0.0224	0.1026	-0.0625	0.0416
6	0.0652	-0.0413	-0.0336	0.0204	-0.0858	0.0834	-0.0228	0.0450	0.0085	-0.1272	0.0273
7	0.0049	-0.0528	-0.1844	-0.0115	-0.1333	-0.0013	-0.1198	-0.0570	-0.0400	-0.0977	-0.0920
8	-0.0071	-0.0042	-0.1566	-0.0836	-0.0211	-0.0064	-0.2081	-0.0417	-0.0830	-0.0345	-0.1919
9	0.0479	-0.0370	0.0215	0.0160	0.0215	0.0604	-0.0382	0.0086	0.0002	-0.0865	-0.0544
10	-0.1119	-0.0640	-0.0779	-0.0736	-0.1689	0.0368	-0.2691	-0.0913	-0.1118	0.0311	-0.1371
11	-0.2119	0.1105	0.0553	0.0831	-0.0160	-0.0237	-0.0776	0.0333	-0.0607	-0.0942	-0.0380
12	-0.4338	0.0370	0.0476	0.0397	0.0118	0.0304	-0.1202	-0.0821	-0.2284	-0.0915	-0.0352
13	0.0559	-0.5811	-0.1555	-0.1047	-0.0093	0.0210	-0.1676	0.0667	-0.0122	-0.1130	0.0001
14	-0.0030	-0.1460	-0.6710	-0.2070	-0.1363	-0.1030	-0.3430	-0.1881	-0.1018	-0.0642	-0.1322
15	-0.0745	-0.1063	-0.2238	-0.5769	-0.1534	-0.0345	-0.3153	-0.1550	-0.0937	-0.0511	-0.1243
16	0.0232	0.0063	-0.0447	-0.0462	-0.5550	0.0313	-0.1320	0.0616	0.0261	-0.2067	-0.0279
17	0.0221	0.0075	-0.0579	0.0631	-0.0336	-0.3083	-0.0211	0.1109	-0.0035	-0.1224	0.0016
18	-0.1203	-0.1388	-0.2553	-0.1923	-0.1918	-0.0139	-0.3157	-0.0739	-0.1122	-0.1203	-0.1255
19	-0.0939	0.0207	-0.1854	-0.1160	-0.0190	0.0333	-0.1480	-0.5738	-0.0781	0.0427	-0.2293
20	-0.2169	0.0105	0.0741	0.0362	0.0184	0.0455	-0.0543	-0.0284	-0.3863	-0.1030	-0.0355
21	0.0080	-0.0836	-0.0938	0.0280	-0.0690	0.0893	-0.0599	0.0706	-0.0172	-0.5438	-0.0928
22	0.0280	-0.0511	-0.1349	-0.0027	0.0503	-0.0507	-0.0843	-0.0958	0.0033	-0.1232	-0.7028
23	0.0071	-0.1015	-0.0936	-0.0197	-0.1359	-0.0345	-0.0879	-0.0182	0.0175	-0.3010	-0.1031
24	0.0543	-0.0426	-0.0725	0.0013	-0.1042	-0.0318	-0.0823	0.0193	0.0474	-0.1694	-0.1482
25	-0.0039	-0.0431	-0.1287	0.0314	-0.0560	0.0003	-0.0400	0.0177	-0.0066	-0.2488	-0.1003
26	-0.0692	-0.1377	-0.1284	-0.0061	-0.0555	0.0632	-0.0861	0.0223	-0.0432	-0.2345	-0.0189
27	-0.0376	-0.0804	-0.1362	-0.0150	-0.0843	0.0054	-0.1304	-0.0807	-0.0661	-0.3426	-0.2927
28	-0.0433	-0.1135	-0.2565	-0.1636	-0.1467	0.0243	-0.2414	-0.0506	-0.1178	-0.2226	-0.1778
29	0.0333	-0.0810	-0.2532	-0.0462	-0.1230	-0.0140	-0.1684	-0.0501	-0.0338	-0.1374	-0.1787
30	0.0191	-0.0349	-0.2271	-0.0372	-0.0917	-0.0622	-0.1458	-0.1390	-0.0713	-0.1053	-0.1968
31	0.0321	-0.0736	-0.2775	-0.0490	-0.1273	-0.0354	-0.1825	-0.0929	-0.0536	-0.1434	-0.2106
32	-0.0282	-0.0322	-0.1236	-0.1191	-0.1087	0.0297	-0.1730	-0.0822	-0.1530	-0.0637	-0.2015
33	0.0997	-0.1003	-0.1659	-0.0680	0.0127	-0.0219	-0.0921	0.0006	-0.0110	-0.0602	-0.1226
34	-0.0137	-0.0947	-0.1033	0.0064	-0.0546	-0.0117	-0.0871	0.0313	0.0672	-0.1721	-0.0190
35	0.1306	0.1048	0.0076	0.1395	0.0856	0.0002	0.1033	0.0992	0.1969	-0.1297	-0.1079
36	0.1512	0.0569	-0.0831	0.0317	0.1837	0.0512	0.1365	0.1369	0.2041	-0.2115	-0.1414
37	-0.1603	0.2154	-0.0318	-0.0234	0.1341	-0.1417	-0.0043	-0.0942	-0.0379	-0.1376	-0.3433
38	0.0159	-0.0201	-0.1296	0.0288	-0.0459	0.0558	-0.0731	-0.0793	-0.0049	-0.1124	-0.1595
39	0.0327	-0.0146	-0.1411	0.0329	-0.0316	0.0398	-0.0466	-0.0465	0.0133	-0.1209	-0.1597
40	-0.0381	-0.0183	-0.0994	0.0117	-0.1035	-0.0403	-0.1137	-0.1045	-0.0436	-0.1306	-0.1647
41	-0.1253	-0.0503	-0.0216	-0.0480	-0.0469	-0.0809	-0.1013	-0.0685	-0.1073	0.0294	-0.1554
42	-0.0293	-0.1286	-0.2463	-0.0943	-0.1464	0.0095	-0.2302	-0.0703	-0.0625	-0.2370	-0.2168
43	-0.0305	-0.0933	-0.1546	-0.0697	-0.0645	0.0308	-0.1200	-0.0530	-0.0504	-0.1418	-0.1096

SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP

	23	24	25	26	27	28	29	30	31	32	33
1	-0.2810	-0.1099	0.0110	-0.0381	-0.2031	-0.3159	-0.1880	-0.1350	-0.2006	-0.0933	-0.0511
2	-0.2226	-0.0852	0.0558	-0.0554	-0.1461	-0.2740	-0.1903	-0.1468	-0.2079	-0.0376	-0.0711
3	-0.2835	-0.1099	0.0349	-0.0511	-0.1974	-0.3307	-0.2105	-0.1563	-0.2271	-0.0758	-0.0670
4	-0.1534	-0.0791	0.1527	0.0269	-0.0969	-0.2402	-0.0404	-0.0410	-0.0489	-0.0560	0.0961
5	-0.1944	-0.0684	0.1317	0.0383	-0.0191	-0.1746	-0.0805	-0.1298	-0.1205	0.0034	0.0316
6	-0.2028	-0.0854	0.1648	0.0381	-0.0658	-0.2396	-0.0711	-0.1009	-0.0998	-0.0294	0.0729
7	-0.1967	-0.0875	0.0951	0.0071	-0.1223	-0.2765	-0.0900	-0.1876	-0.1551	-0.0738	0.0100
8	-0.1241	-0.1174	0.0966	0.0377	-0.1627	-0.2850	-0.2625	-0.1959	-0.2837	-0.1993	0.0013
9	-0.0249	-0.1172	0.0440	0.0804	-0.0845	-0.0629	-0.0780	0.0507	-0.0320	0.0358	-0.0268
10	-0.0737	-0.0357	0.1137	0.1403	-0.0881	-0.1599	-0.1482	-0.2042	-0.2051	-0.1385	0.0454
11	-0.1241	-0.1178	0.1580	0.0966	-0.0692	-0.0262	0.0172	-0.0871	-0.0294	0.0037	0.0998
12	-0.1045	-0.0745	0.0808	0.0483	-0.1242	-0.0770	-0.0201	-0.0675	-0.0470	0.0174	0.0877
13	-0.1213	-0.0460	0.0059	-0.1213	-0.0697	-0.1129	-0.0842	-0.0399	-0.0800	0.1474	0.0203
14	-0.0980	-0.0788	0.0136	-0.0658	-0.1673	-0.1780	-0.3476	-0.3073	-0.3987	-0.0789	-0.1559
15	-0.1053	-0.1130	0.0344	-0.0244	-0.1499	-0.1750	-0.1617	-0.1486	-0.1882	-0.0769	-0.0777
16	-0.2099	-0.1595	0.0348	0.0573	-0.1372	-0.0530	-0.0414	-0.0977	-0.0768	0.1161	0.0304
17	-0.1524	-0.0901	0.0491	-0.0633	-0.0687	-0.0567	0.0201	-0.0976	-0.0324	0.0260	0.0238
18	-0.1839	-0.1334	0.1096	0.0281	-0.1744	-0.2085	-0.2083	-0.2326	-0.2621	-0.0419	-0.0004
19	-0.0803	-0.0762	0.0405	0.0182	-0.197[illegible]	-0.1113	-0.1681	-0.2756	-0.2538	-0.0531	-0.0500
20	-0.1125	-0.0794	0.1328	-0.0078	-0.1278	-0.0662	0.0251	-0.1214	-0.0402	0.0156	0.0830
21	-0.2712	-0.2596	-0.0025	-0.0001	-0.2860	-0.1719	0.0006	-0.1618	-0.0773	0.1133	-0.0254
22	-0.1543	-0.1128	0.0131	-0.0089	-0.3142	-0.1958	-0.2439	-0.2477	-0.2951	-0.1509	-0.1051
23	-0.6137	-0.2203	0.0328	-0.0309	-0.3378	-0.1162	-0.0857	-0.1998	-0.1579	0.0780	-0.0919
24	-0.1729	-0.6107	0.0600	0.0875	-0.2285	-0.0934	-0.1117	-0.2123	-0.1826	0.0477	0.0016
25	-0.2049	-0.1711	-0.1994	0.0544	-0.2314	-0.1403	-0.1283	-0.1744	-0.1764	0.1009	0.0323
26	-0.1782	-0.0314	0.0291	-0.3983	-0.1190	-0.1555	-0.0622	-0.1371	-0.1108	0.1077	0.0463
27	-0.3781	-0.3134	-0.0057	0.0191	-0.3923	-0.2157	-0.1497	-0.2864	-0.2457	0.0155	-0.0355
28	-0.1984	-0.1932	-0.0010	-0.0079	-0.2443	-0.6310	-0.2697	-0.2285	-0.3045	-0.1690	-0.1002
29	-0.1595	-0.1266	0.0427	0.0380	-0.1627	-0.2142	-0.5942	-0.3085	-0.5774	-0.1932	-0.0627
30	-0.1657	-0.0989	0.0231	-0.0436	-0.1828	-0.1333	-0.3109	-0.7588	-0.5890	-0.2018	-0.1244
31	-0.1840	-0.1328	0.0406	0.0103	-0.1933	-0.2111	-0.5616	-0.5330	-0.6616	-0.2233	-0.0962
32	-0.1102	-0.0541	0.0615	0.0281	-0.1590	-0.3209	-0.3730	-0.2836	-0.4056	-0.5709	-0.1304
33	-0.0538	-0.0813	0.0568	0.0581	-0.0690	-0.1097	-0.1655	-0.2203	-0.2254	-0.0898	-0.5913
34	-0.1721	-0.2401	-0.0084	-0.0320	-0.1445	-0.0916	-0.1073	-0.1122	-0.1314	0.0185	-0.1034
35	-0.1890	-0.1520	-0.0155	0.0284	-0.0819	-0.1680	-0.0574	-0.1634	-0.1109	-0.0665	-0.2424
36	-0.2819	0.0999	0.0681	0.0480	-0.0419	-0.1394	-0.0621	-0.0448	-0.0640	-0.0930	-0.1238
37	-0.2500	-0.1515	-0.1408	-0.0764	-0.2787	-0.0137	-0.0968	-0.1847	-0.1484	-0.2584	-0.1895
38	-0.1612	-0.2055	0.0858	0.1255	-0.1569	-0.2218	-0.2289	-0.2862	-0.3028	-0.1515	-0.0352
39	-0.1509	-0.1812	0.0998	0.1269	-0.1409	-0.1897	-0.2562	-0.2924	-0.3255	-0.1437	-0.0392
40	-0.1482	-0.2272	0.0355	0.0780	-0.1951	-0.1917	-0.2697	-0.2535	-0.3165	-0.1925	-0.0450
41	0.0105	-0.0964	-0.1041	-0.0910	-0.0926	0.0416	-0.0679	-0.1140	-0.1038	-0.0638	-0.1338
42	-0.3063	-0.2231	0.0657	0.0130	-0.2865	-0.3561	-0.3109	-0.3343	-0.3851	-0.1375	-0.1038
43	-0.0867	-0.0971	-0.0686	-0.0035	-0.1573	-0.1114	-0.1132	-0.0453	-0.1034	-0.0484	-0.1228

SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP

	34	35	36	37	38	39	40	41	42
1	-0.0477	-0.2712	-0.2587	-0.0921	-0.1413	-0.0952	-0.0993	-0.0539	-0.3622
2	-0.0037	-0.1223	-0.0498	0.0360	-0.1561	-0.1195	-0.0980	-0.0331	-0.3394
3	-0.0310	-0.2202	-0.1707	-0.0291	-0.1649	-0.1183	-0.1099	-0.0495	-0.3929
4	0.0502	-0.0231	0.0570	0.0561	-0.1152	-0.0990	-0.0892	0.0591	-0.2035
5	0.0878	0.0478	-0.0447	0.0686	-0.0285	-0.0038	-0.0051	0.0578	-0.1399
6	0.0809	0.0140	0.0064	0.0694	-0.0818	-0.0579	-0.0531	0.0679	-0.1982
7	-0.0016	-0.2200	-0.2709	-0.1465	-0.1219	-0.0923	-0.0710	0.0188	-0.2710
8	-0.1139	-0.2559	-0.0841	-0.2553	-0.2379	-0.1860	-0.1941	-0.0573	-0.3438
9	-0.0586	-0.1687	0.0360	-0.0645	-0.0769	-0.0569	-0.0627	0.0722	-0.1110
10	-0.0510	-0.0296	0.0051	-0.0176	-0.0815	-0.0459	-0.0675	-0.0432	-0.2392
11	0.0352	-0.0882	-0.0708	-0.1791	-0.0206	-0.0185	0.0073	0.0589	-0.0778
12	0.0074	0.0534	-0.0321	-0.1540	-0.0244	-0.0581	0.0041	-0.0128	-0.1065
13	-0.0235	0.1042	0.0247	0.2561	-0.0767	-0.1247	-0.0565	0.1359	-0.1055
14	0.0446	0.0391	-0.0086	-0.0122	-0.2062	-0.2446	-0.1701	0.0149	-0.3026
15	-0.0382	-0.1068	-0.1437	-0.1371	-0.1347	-0.1433	-0.1019	0.0031	-0.2579
16	-0.0091	0.0274	-0.0139	0.2637	-0.0444	-0.0104	-0.0088	0.0941	-0.0873
17	-0.0728	-0.2921	-0.0655	-0.1885	0.0280	0.0145	0.0355	0.1747	-0.0693
18	-0.0483	-0.0480	-0.0626	-0.0474	-0.1642	-0.1648	-0.1177	0.0471	-0.2945
19	0.0422	-0.0924	-0.0492	-0.1644	-0.1445	-0.1309	-0.1216	-0.0170	-0.2069
20	0.0429	-0.0055	-0.1113	-0.2219	-0.0183	-0.0459	0.0138	0.0577	-0.0798
21	-0.0543	-0.1573	-0.2333	-0.0344	-0.0946	-0.0920	-0.0329	0.1574	-0.1585
22	-0.0473	-0.0719	-0.1470	-0.3574	-0.2079	-0.2461	-0.2093	-0.0196	-0.2669
23	-0.0145	-0.1207	-0.2184	-0.0365	-0.0724	-0.0602	-0.0484	0.1646	-0.1932
24	-0.0259	-0.1846	-0.1586	-0.1892	-0.1479	-0.1593	-0.1243	0.1263	-0.1641
25	-0.0009	-0.0175	-0.1004	-0.1040	-0.1194	-0.1529	-0.0593	0.1308	-0.1589
26	-0.0827	0.0440	0.0355	0.2003	-0.0020	0.0056	0.0657	0.1031	-0.1425
27	-0.0295	-0.1508	-0.2226	-0.2252	-0.1851	-0.1959	-0.1363	0.1360	-0.2833
28	0.0304	-0.1491	-0.1134	-0.0016	-0.2159	-0.1825	-0.1485	0.0185	-0.4230
29	-0.0454	0.1359	-0.0702	-0.0297	-0.2727	-0.2974	-0.2426	0.0261	-0.3222
30	-0.0427	0.0646	-0.0162	-0.1676	-0.2192	-0.2778	-0.1924	-0.0343	-0.2888
31	-0.0506	0.1242	-0.0581	-0.0812	-0.2886	-0.3305	-0.2557	0.0053	-0.3531
32	-0.0894	0.0698	-0.0945	-0.0388	-0.2103	-0.2489	-0.1659	-0.0737	-0.3910
33	-0.1135	-0.1069	0.0066	0.0436	-0.0743	-0.1242	-0.0510	0.0335	-0.1990
34	-0.6135	-0.0221	0.0575	0.0529	-0.1477	-0.1478	-0.1115	0.0888	-0.1866
35	-0.1311	-0.7775	-0.5159	-0.3913	-0.1201	-0.0833	-0.1156	0.2038	-0.1209
36	-0.1268	-0.4937	-0.7509	-0.4029	-0.0637	-0.1092	-0.0515	0.1466	-0.0324
37	-0.1541	-0.4757	-0.3445	-0.8440	-0.1217	-0.0996	-0.1148	0.0054	-0.2039
38	-0.0753	-0.1385	-0.2042	-0.1999	-0.5554	-0.5320	-0.4791	0.0209	-0.2564
39	-0.0675	-0.0607	-0.1279	-0.2241	-0.5399	-0.6172	-0.4751	0.0633	-0.2259
40	-0.0949	-0.0659	-0.1190	-0.1399	-0.6578	-0.6746	-0.6490	-0.0435	-0.2749
41	-0.0500	0.1808	0.2431	0.0559	0.0862	0.1238	0.0794	-0.2833	-0.0937
42	-0.0940	-0.1014	-0.1509	-0.0958	-0.2400	-0.2380	-0.1777	0.0531	-0.4194
43	-0.0150	-0.2936	-0.2934	-0.0917	-0.1551	-0.1528	-0.1488	-0.0321	-0.1797

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SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP - ENCOURAGED

MATRIX OF N'S

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36     41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  41.
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41    130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130.
42    130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130. 130.
43    126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126. 126.
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SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP - ENCOURAGED

MATRIX OF N'S

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          25   26   27   28   29   30   31.  32   33   34   35   36   37   38   39   40   41 . 42

   1     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
   2     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
   3     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
   4     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
   5     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
   6     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
   7     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
   8     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
   9     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  10     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  11     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  12     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  13     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  14     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  15     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  16     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  17     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  18     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  19     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  20     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  21     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  22     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  23     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  24     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  25     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  26     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  27     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  28     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
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  30     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  31     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  32     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  33     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  34     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  35      41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  29.  29.  29.  41.  41.  41.  41.  41.
  36      41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  29.  29.  29.  41.  41.  41.  41.  41.
  37      41.  41.  41.  41.  41.  41.  41.  41.  41.  41.  29.  29.  29.  41.  41.  41.  41.  41.
  38     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  39     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  40     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  41     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  42     130. 130. 130. 130. 130. 130. 130. 130. 130. 130.  29.  29.  29. 130. 130. 130. 130. 130.
  43     126. 126. 126. 126. 126. 126. 126. 126. 126. 126.  29.  29.  29. 126. 126. 126. 126. 126.
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SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP - ENCOURAGED

SCORE 43 = SES

	1	2	3	4	5	6	7	8	9	10	11
1	-0.7957	-0.2617	-0.6633	-0.0951	-0.1956	-0.1863	-0.1395	-0.2689	-0.0378	-0.1519	0.0970
2	-0.4385	-0.5998	-0.6226	-0.0807	-0.1889	-0.1739	-0.1403	-0.2639	-0.0578	-0.0790	0.0476
3	-0.6946	-0.4596	-0.7094	-0.0974	-0.2119	-0.1988	-0.1540	-0.2935	-0.0517	-0.1302	0.0817
4	-0.2124	-0.2830	-0.2973	-0.5196	-0.0865	-0.3429	-0.1694	-0.0439	-0.0684	-0.1079	0.0825
5	-0.3125	-0.1789	-0.3034	-0.1595	-0.6296	-0.5198	-0.3018	-0.0864	-0.0630	-0.0606	0.1027
6	-0.3153	-0.2707	-0.3570	-0.3908	-0.4443	-0.5186	-0.2845	-0.0789	-0.0778	-0.0984	0.1107
7	-0.2360	-0.1805	-0.2547	-0.0101	-0.1367	-0.0995	-0.6988	-0.1899	-0.0295	-0.1160	0.0048
8	-0.3274	-0.2014	-0.3258	-0.0366	-0.0731	-0.0702	-0.1724	-0.6276	-0.1328	-0.0416	0.1022
9	-0.0628	-0.0112	-0.0471	-0.0368	0.0401	0.0075	-0.0565	-0.2717	-0.7232	-0.0768	0.0865
10	-0.2388	-0.1319	-0.2291	-0.1566	0.1016	-0.0156	-0.1937	-0.1393	-0.0994	-0.6157	-0.1494
11	-0.1549	-0.1587	-0.1899	-0.0954	-0.0439	-0.0822	-0.1787	-0.0737	0.0827	-0.1821	-0.1990
12	-0.1295	-0.0817	-0.1300	-0.0618	0.0268	-0.0153	-0.1143	-0.0419	0.0465	-0.2128	-0.2212
13	-0.1871	-0.1926	-0.2299	-0.0820	0.0169	-0.0331	-0.0776	-0.1780	-0.0374	-0.0567	0.0087
14	-0.1614	-0.2179	-0.2276	-0.1010	0.1180	0.0260	-0.1573	-0.0758	0.1287	-0.0778	-0.0582
15	-0.1590	-0.1944	-0.2127	-0.0854	-0.0639	-0.0905	-0.1664	-0.1196	-0.0481	-0.1277	-0.0767
16	-0.2818	-0.2892	-0.3458	-0.1104	-0.0571	-0.0995	-0.0686	0.0491	0.0122	-0.2642	-0.0392
17	-0.2277	-0.1912	-0.2554	-0.1003	-0.0526	-0.0908	-0.2516	-0.0444	0.0516	-0.1635	-0.0472
18	-0.3158	-0.3005	-0.3742	-0.1389	-0.0012	-0.0766	-0.2212	-0.2393	0.0028	-0.2753	-0.1013
19	-0.0936	-0.1225	-0.1298	0.0529	-0.0150	0.0186	-0.1967	-0.1343	-0.0481	-0.1857	-0.0596
20	-0.1700	-0.3394	-0.3017	-0.2125	0.0693	-0.0683	-0.1359	-0.0784	0.1071	-0.0744	-0.1947
21	-0.2660	-0.2087	-0.2901	-0.0477	0.0365	-0.0009	-0.1670	-0.1115	-0.0436	-0.1885	-0.0682
22	-0.0733	-0.1163	-0.1131	-0.0818	-0.0519	-0.0803	-0.2028	-0.2633	-0.0093	-0.1032	-0.0486
23	-0.3237	-0.1725	-0.3071	-0.0350	-0.1318	-0.1097	-0.1795	-0.1241	-0.0807	-0.1356	-0.0990
24	-0.1790	-0.1799	-0.2175	-0.1059	-0.0310	-0.0791	-0.1492	-0.1845	-0.0653	-0.1730	-0.0815
25	-0.3026	-0.2878	-0.3584	-0.1319	-0.0561	-0.1105	-0.1986	-0.1317	-0.0601	-0.0955	-0.0431
26	-0.2647	-0.3226	-0.3535	-0.1117	0.0048	-0.0577	-0.2039	-0.1044	-0.0151	-0.2059	-0.1364
27	-0.3082	-0.2764	-0.3557	-0.1133	-0.0363	-0.0867	-0.2422	-0.2284	-0.0735	-0.2002	-0.1163
28	-0.4394	-0.2967	-0.4522	-0.1740	-0.0945	-0.1599	-0.2876	-0.2909	-0.0629	-0.1575	-0.0501
29	-0.3692	-0.3071	-0.4125	-0.1557	-0.1304	-0.1746	-0.2945	-0.2484	-0.0272	-0.1490	0.0148
30	-0.0390	-0.1215	-0.0938	0.0070	0.0938	0.0683	-0.1387	-0.0899	0.1886	-0.0057	-0.0647
31	-0.2960	-0.2831	-0.3515	-0.1151	-0.0599	-0.1040	-0.2807	-0.2255	0.0576	-0.1153	-0.0157
32	-0.2811	-0.2446	-0.3202	-0.2928	-0.1145	-0.2385	-0.2624	-0.2330	0.0955	-0.1582	-0.0699
33	-0.1196	-0.1662	-0.1713	-0.1942	-0.0386	-0.1668	-0.1167	-0.1306	0.0297	-0.0382	0.0236
34	-0.2897	-0.0209	-0.1995	-0.1597	-0.0372	-0.1127	-0.1312	-0.3182	-0.1250	-0.0599	0.0562
35	-0.0057	0.1906	0.1171	-0.0183	-0.0906	-0.0730	0.1133	-0.1090	0.0183	0.1433	0.2195
36	-0.2102	0.3485	0.0801	0.0711	-0.1291	-0.0554	-0.0004	0.0497	0.0720	0.3353	0.2844
37	-0.1092	0.2339	0.0751	0.0113	-0.0192	-0.0079	-0.0379	-0.1537	-0.0010	0.2451	-0.0747
38	-0.2743	-0.1487	-0.2617	-0.0385	-0.1286	-0.1094	-0.2489	-0.1846	-0.0377	-0.0647	0.0864
39	-0.2428	-0.1649	-0.2504	-0.0669	-0.0886	-0.0974	-0.2608	-0.1637	0.0341	-0.0295	0.0592
40	-0.1804	-0.1843	-0.2209	-0.0183	-0.0487	-0.0434	-0.2199	-0.0917	0.0890	-0.0266	0.0659
41	0.0446	-0.1127	-0.0347	-0.1267	-0.0880	-0.1296	-0.0416	-0.1312	-0.0410	-0.1221	-0.1433
42	-0.4655	-0.3588	-0.5041	-0.2000	-0.1260	-0.1957	-0.3188	-0.3176	-0.0593	-0.2059	-0.0333
43	-0.2628	-0.1634	-0.2611	-0.0261	-0.0136	-0.0236	0.0130	-0.1922	0.0252	-0.1309	-0.0319

SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP - ENCOURAGED

SCORE 43 = SES

	12	13	14	15	16	17	18	19	20	21	22
1	0.1259	-0.1879	-0.1926	0.0704	-0.1013	-0.0550	-0.0988	0.0581	0.0543	-0.1543	-0.0219
2	0.0170	-0.2133	-0.3021	0.1628	-0.0807	-0.0718	-0.1245	0.0439	0.0100	-0.1502	0.0561
3	0.0833	-0.2197	-0.2675	0.1244	-0.1011	-0.0691	-0.1218	0.0567	0.0373	-0.1677	0.0154
4	0.1416	-0.1116	-0.1304	-0.0535	-0.1110	0.0179	-0.0532	0.1545	0.0082	-0.0678	0.0707
5	0.1238	-0.0653	0.0158	0.1208	0.0143	-0.0956	0.0479	-0.0051	0.1956	0.0338	0.0166
6	0.1570	-0.1034	-0.0630	0.0460	-0.0531	-0.0501	0.0004	0.0831	0.1275	-0.0166	0.0500
7	-0.0277	-0.0483	-0.1924	0.1601	-0.0516	-0.0896	-0.0763	0.0594	-0.0264	-0.0911	-0.0836
8	0.0393	-0.1638	-0.2048	0.1129	0.0563	-0.0427	-0.1089	0.0611	0.0246	-0.0822	-0.2113
9	0.0457	-0.1575	-0.0242	-0.0764	0.0849	-0.0140	-0.0545	-0.0579	0.0091	-0.0664	-0.0977
10	-0.2026	-0.1804	-0.1498	-0.0303	-0.2025	-0.0600	-0.3091	-0.0674	-0.1353	-0.0608	-0.0504
11	-0.1753	0.0645	-0.0265	0.2109	0.0016	-0.1651	-0.0682	-0.0346	0.0047	-0.1338	-0.1203
12	-0.3267	0.0470	0.0134	0.1502	0.0207	-0.1315	-0.0966	-0.0528	-0.0492	-0.1282	-0.0715
13	0.1044	-0.5866	-0.2036	-0.0234	0.0092	0.0518	-0.1790	0.1130	0.0906	-0.0152	0.0026
14	0.0704	-0.2545	-0.6208	0.0524	-0.0652	-0.0130	-0.2167	-0.1152	-0.0585	-0.1063	-0.0439
15	-0.1105	-0.2551	-0.1520	-0.4562	-0.0795	-0.0193	-0.2623	-0.1560	-0.0738	-0.0976	-0.1285
16	-0.1174	-0.1160	-0.1441	-0.0987	-0.6346	0.0092	-0.2663	-0.0192	-0.0428	-0.2572	0.0697
17	-0.0747	-0.0363	-0.1038	0.1457	-0.0441	-0.3872	-0.0611	0.0375	-0.0966	-0.1296	0.0412
18	-0.0856	-0.2980	-0.3171	0.0014	-0.1530	-0.0651	-0.2806	-0.0374	-0.0267	-0.1672	-0.0963
19	-0.1151	-0.0942	-0.2231	-0.0175	0.0017	-0.0348	-0.1494	-0.5185	-0.0599	-0.1592	-0.2365
20	-0.1573	-0.1105	-0.1398	-0.0084	0.0332	-0.1116	-0.1486	-0.0552	-0.3383	-0.1316	-0.0559
21	-0.0146	-0.2094	-0.2563	0.0501	-0.0373	0.0273	-0.1646	-0.0234	-0.0192	-0.5789	-0.1730
22	0.0050	-0.1590	-0.1406	0.0852	0.1106	-0. 946	-0.0997	-0.0698	0.0251	-0.1491	-0.6671
23	-0.0609	-0.1653	-0.1372	-0.0969	-0.1672	-0.0826	-0.2002	-0.0981	-0.0087	-0.2924	-0.0522
24	0.0133	-0.1445	-0.1993	-0.0191	-0.1372	-0.1232	-0.1910	-0.0097	0.1285	-0.2954	-0.1972
25	-0.0726	-0.1659	-0.2768	0.1269	-0.0285	-0.1141	-0.1277	-0.0148	0.0072	-0.3767	-0.1020
26	-0.1358	-0.2061	-0.2373	0.0809	-0.1129	-0.0739	-0.2086	-0.0065	-0.0660	-0.2128	-0.0274
27	-0.0832	-0.2346	-0.2829	0.0185	-0.0738	-0.1002	-0.2327	-0.1171	-0.0356	-0.4299	-0.2851
28	-0.0442	-0.2512	-0.3205	-0.0552	-0.1801	-0.0221	-0.2618	0.0375	-0.0873	-0.3475	-0.1519
29	0.0225	-0.2488	-0.3468	0.0234	-0.0666	-0.0620	-0.1958	0.0399	0.0163	-0.1882	-0.0715
30	0.0175	-0.0780	-0.2939	0.0652	-0.0285	-0.0133	-0.1025	-0.0232	-0.0326	-0.1172	-0.1112
31	0.0243	-0.2209	-0.3847	0.0448	-0.0623	-0.0525	-0.1909	0.0206	-0.0011	-0.1912	-0.1003
32	0.0120	-0.1631	-0.1788	-0.1057	-0.0949	0.0411	-0.1844	0.0084	-0.1832	-0.1093	-0.0999
33	0.1984	-0.1780	-0.1021	0.0234	0.0496	-0.0651	-0.0411	-0.0103	-0.0395	-0.0511	-0.0929
34	0.0283	-0.1351	-0.2395	0.0631	-0.0587	-0.0513	-0.1158	0.0295	0.1379	-0.1423	0.0382
35	0.2522	0.1336	0.0500	0.1515	0.1921	-0.0493	0.2152	0.1693	0.2220	-0.1548	-0.0910
36	0.2754	0.0718	-0.0879	-0.0337	0.3286	-0.0155	0.2405	0.1985	0.2558	-0.2196	-0.0796
37	-0.2285	0.2876	0.0005	-0.0537	0.2543	-0.1874	0.0701	-0.0275	-0.0656	-0.1779	-0.3289
38	-0.0095	-0.1588	-0.2506	0.1155	-0.0154	0.0432	-0.0749	-0.0603	0.0513	-0.2732	-0.1568
39	-0.0106	-0.1522	-0.2578	0.1125	0.0118	0.0241	-0.0671	-0.0455	0.0397	-0.2249	-0.1532
40	-0.0263	-0.1597	-0.2061	0.0745	-0.0223	-0.0308	-0.0679	-0.1202	0.0524	-0.1662	-0.1398
41	-0.1392	-0.0775	0.0103	0.0361	-0.0546	-0.0152	-0.1234	-0.1121	-0.1016	0.0650	-0.2149
42	-0.0006	-0.2798	-0.3468	0.0381	-0.1169	-0.0790	-0.2371	-0.0128	-0.0155	-0.2912	-0.1470
43	-0.0860	-0.1689	-0.1641	0.0022	-0.0864	0.0602	-0.1680	-0.1255	-0.0268	-0.2118	-0.1420

SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP - ENCOURAGED

SCORE 43 = SES

	23	24	25	26	27	28	29	30	31	32	33
1	-0.2639	-0.2033	0.0193	-0.0141	-0.1490	-0.2230	-0.1690	-0.0384	-0.1427	0.0860	-0.0261
2	-0.2081	-0.1520	0.0144	-0.0893	-0.1144	-0.1284	-0.1661	-0.0700	-0.1564	0.1532	-0.0428
3	-0.2622	-0.1978	0.0187	-0.0537	-0.1464	-0.1975	-0.1846	-0.0583	-0.1640	0.1288	-0.0372
4	-0.1171	-0.1437	0.1327	0.0347	-0.0279	-0.1140	-0.1528	0.0288	-0.0973	0.0889	0.0287
5	-0.2173	-0.1093	0.1143	0.0012	-0.0003	-0.1039	-0.1649	-0.0415	-0.1412	0.0692	-0.0055
6	-0.2021	-0.1491	0.1460	0.0201	-0.0158	-0.1291	-0.1891	-0.0100	-0.1432	0.0932	0.0126
7	-0.2320	-0.0858	0.1377	-0.0227	-0.0828	-0.1637	0.0199	-0.1329	-0.0518	0.1408	0.0245
8	-0.1877	-0.1544	0.0689	0.0134	-0.1507	-0.2035	-0.3199	-0.2117	-0.3395	-0.0256	-0.0172
9	-0.0053	-0.0769	-0.0156	0.0533	-0.0957	0.0213	-0.1926	0.1236	-0.0791	0.1352	0.0294
10	-0.0551	-0.1275	0.0766	0.0429	-0.1255	-0.1204	-0.0945	-0.0746	-0.1063	0.0899	0.2092
11	-0.1476	-0.2232	-0.0011	-0.0116	-0.1672	-0.0077	-0.0718	-0.1512	-0.1279	0.0594	0.0722
12	-0.1035	-0.1332	-0.0746	-0.0872	-0.1650	-0.0537	-0.0511	-0.0580	-0.0663	0.0875	0.1664
13	-0.0483	-0.0768	0.0773	-0.0347	-0.0034	-0.1364	-0.2035	-0.0077	-0.1526	0.1203	0.1122
14	-0.0459	-0.1433	0.0342	-0.0923	-0.1175	-0.1589	-0.3479	-0.3719	-0.4399	-0.0178	-0.1107
15	-0.1798	-0.2155	0.0702	-0.0713	-0.1911	-0.1563	-0.2288	-0.1138	-0.2241	-0.0061	-0.0368
16	-0.2886	-0.2192	-0.0849	-0.0820	-0.2084	-0.2086	-0.0827	-0.0042	-0.0625	0.0896	0.0598
17	-0.2171	-0.1015	0.0407	-0.1282	-0.1113	-0.0549	-0.0044	-0.1644	-0.0853	0.1100	0.1473
18	-0.1946	-0.2386	0.0421	-0.0686	-0.1988	-0.2073	-0.2928	-0.2184	-0.3230	0.0803	0.0616
19	-0.1240	-0.2065	-0.0070	-0.1537	-0.2898	-0.0667	-0.1430	-0.2295	-0.2190	0.1436	-0.0952
20	0.0053	-0.0749	-0.0006	-0.1239	-0.1425	-0.0999	-0.0695	-0.1088	-0.1051	-0.0188	0.0748
21	-0.3218	-0.3260	-0.0759	0.0040	-0.3695	-0.2230	-0.0563	-0.1695	-0.1258	0.1392	0.0138
22	-0.0950	-0.1981	0.0530	-0.0712	-0.2745	-0.2227	-0.2322	-0.2552	-0.2971	-0.0807	-0.1295
23	-0.7062	-0.3966	-0.0670	-0.0798	-0.4021	-0.2069	-0.1279	-0.1529	-0.1698	0.1184	-0.1190
24	-0.2494	-0.6252	-0.0746	0.0175	-0.3001	-0.1079	-0.2270	-0.2183	-0.2749	0.0760	0.0147
25	-0.3069	-0.2676	-0.2502	-0.0815	-0.3239	-0.2353	-0.2396	-0.1575	-0.2538	0.0779	-0.0075
26	-0.2229	-0.0688	-0.0863	-0.3823	-0.1965	-0.1976	-0.1264	-0.1730	-0.1787	0.1588	0.1682
27	-0.4334	-0.4391	-0.1052	-0.0819	-0.4585	-0.2712	-0.2132	-0.2481	-0.2796	0.0894	-0.0518
28	-0.3177	-0.2803	-0.1063	-0.0229	-0.3274	-0.6249	-0.2246	-0.1689	-0.2484	0.0504	0.0070
29	-0.1973	-0.1613	0.0358	-0.0504	-0.1284	-0.1747	-0.6053	-0.1946	-0.5396	-0.0632	-0.0186
30	-0.1183	-0.0718	0.0697	-0.1196	-0.0854	-0.0453	-0.1630	-0.7358	-0.4863	-0.0433	-0.0787
31	-0.1986	-0.1520	0.0560	-0.0878	-0.1328	-0.1511	-0.5263	-0.4526	-0.6106	-0.0659	-0.0468
32	-0.1137	-0.0839	0.0642	-0.0246	-0.1383	-0.2829	-0.3514	-0.2605	-0.3869	-0.4610	-0.1840
33	-0.1426	-0.0770	0.0555	0.0393	-0.0908	-0.0960	-0.1332	-0.2141	-0.2042	-0.0074	-0.5153
34	-0.2826	-0.2476	-0.0537	-0.0109	-0.1550	-0.2040	-0.2169	-0.1442	-0.2305	-0.0939	-0.0687
35	-0.1988	-0.3894	0.0577	0.1805	-0.0788	0.0443	0.1744	-0.1098	0.0778	0.1146	-0.3207
36	-0.3027	-0.0778	0.1294	0.1440	-0.0072	-0.1442	0.0664	0.0679	0.0759	-0.0525	-0.1411
37	-0.2088	-0.3723	-0.0887	0.0395	-0.2582	0.1707	0.0461	-0.1168	-0.0165	-0.2920	-0.2373
38	-0.3192	-0.2817	0.0079	-0.0245	-0.2532	-0.2151	-0.2810	-0.2354	-0.3229	-0.0587	-0.0407
39	-0.2676	-0.2016	0.0483	-0.0475	-0.2027	-0.1989	-0.3381	-0.2520	-0.3729	-0.1050	-0.0594
40	-0.2624	-0.2102	0.0119	-0.0639	-0.1914	-0.1405	-0.3708	-0.2454	-0.3935	-0.1112	-0.0879
41	-0.0950	-0.1640	-0.0384	-0.1347	-0.1341	0.0083	-0.1453	-0.1510	-0.1816	-0.2516	-0.1167
42	-0.3546	-0.3148	0.0005	-0.0576	-0.2970	-0.3157	-0.3284	-0.2626	-0.3711	0.0333	-0.0678
43	-0.1582	-0.1809	-0.1240	0.0930	-0.2413	-0.1240	-0.2042	-0.1024	-0.1999	0.0068	-0.1040

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SESAME ST. YEAR II CORRELATIONS OF PRETEST (VERTICAL) VS. GAINS (HORIZONTAL)
FOR NEW STUDY GROUP - ENCOURAGED

SCORE 43 = SES

          34        35        36        37        38        39        40        41        42

 1   -0.2149   -0.1093   -0.2405   -0.1627   -0.1137   -0.0687   -0.0679    0.1214   -0.2949
 2   -0.1088    0.0707    0.0377    0.0738   -0.1573   -0.1147   -0.0896    0.1106   -0.2544
 3   -0.1827   -0.0099   -0.0970   -0.0347   -0.1473   -0.0990   -0.0857    0.1281   -0.3040
 4   -0.0800    0.0016    0.1458   -0.0157   -0.0836   -0.1102   -0.0324    0.2308   -0.1527
 5   -0.0755   -0.0643   -0.1126   -0.0570   -0.0276    0.0319    0.0409    0.0815   -0.1500
 6   -0.0922   -0.0373    0.0125   -0.0424   -0.0640   -0.0416    0.0076    0.1803   -0.1797
 7   -0.1102   -0.1871   -0.1570   -0.2395    0.0037   -0.0001    0.0487    0.1028   -0.1791
 8   -0.2438   -0.2242    0.0314   -0.2773   -0.1499   -0.1284   -0.0972    0.0729   -0.2891
 9   -0.0898   -0.1917   -0.0436   -0.0940    0.0234    0.0505    0.0338    0.1560   -0.0944
10   -0.1691   -0.1460    0.1072   -0.1132    0.0215    0.0441    0.0467    0.0597   -0.2164
11   -0.1412   -0.1667    0.0255   -0.3173   -0.0796   -0.0931   -0.0332    0.1156   -0.1528
12   -0.0517    0.0135    0.1500   -0.2580   -0.0157   -0.0841    0.0351    0.0838   -0.1126
13   -0.0288    0.1981    0.0893    0.3137   -0.2058   -0.2595   -0.1706    0.0325   -0.1285
14   -0.0550    0.1808    0.0554   -0.0670   -0.3283   -0.3990   -0.2675    0.1207   -0.2620
15   -0.0774   -0.2841   -0.2547   -0.3702   -0.2505   -0.2965   -0.2119    0.1119   -0.2727
16   -0.0615    0.0862    0.2251    0.4351   -0.0285    0.0571    0.0200   -0.0431   -0.2488
17   -0.1242   -0.2197   -0.1328   -0.3183   -0.0277   -0.0285   -0.0107    0.1571   -0.1348
18   -0.1684   -0.0457    0.0709   -0.1046   -0.2268   -0.2505   -0.1557    0.1160   -0.3258
19   -0.0572   -0.1702   -0.0153   -0.1233   -0.1989   -0.1564   -0.1873    0.0451   -0.2221
20   -0.0114   -0.0276    0.0788   -0.3342   -0.0582   -0.1155    0.0138    0.0460   -0.1769
21   -0.0988   -0.2868   -0.3189   -0.2069   -0.1536   -0.0969   -0.0838    0.1537   -0.2797
22   -0.1232   -0.2082   -0.0996   -0.4121   -0.1946   -0.2043   -0.1979   -0.0287   -0.2800
23   -0.0733   -0.1464   -0.1773   -0.0386   -0.1703   -0.1206   -0.1423    0.0794   -0.3303
24   -0.1455   -0.2006   -0.0880   -0.3341   -0.2258   -0.1796   -0.1953    0.1400   -0.2810
25   -0.1114   -0.0746    0.0202   -0.1572   -0.1642   -0.1664   -0.0770    0.1320   -0.3114
26   -0.1190    0.0287    0.0990    0.1229   -0.1558   -0.1411   -0.1019    0.0805   -0.2466
27   -0.1398   -0.2488   -0.1380   -0.3055   -0.2422   -0.2090   -0.1805    0.1314   -0.4030
28   -0.1243    0.0431   -0.0860   -0.0023   -0.1831   -0.1479   -0.0963    0.1412   -0.4353
29   -0.1462    0.1966    0.1399   -0.1338   -0.2745   -0.2915   -0.2246    0.0822   -0.3536
30   -0.0835    0.1429    0.1687   -0.1951   -0.1899   -0.2717   -0.1670    0.0408   -0.1879
31   -0.1454    0.2018    0.1679   -0.1729   -0.2867   -0.3336   -0.2395    0.0792   -0.3459
32   -0.1545    0.0876    0.0098   -0.1512   -0.1454   -0.2394   -0.0807    0.0700   -0.3844
33   -0.0400   -0.0975   -0.0348   -0.0345   -0.0268   -0.0988   -0.0106    0.1419   -0.1913
34   -0.6812   -0.1466   -0.0456   -0.0301   -0.2054   -0.2056   -0.1893    0.0260   -0.3199
35    0.1508   -0.8274   -0.6280   -0.3539    0.0191    0.0625    0.0168    0.1821    0.0792
36   -0.0106   -0.6040   -0.8126   -0.4157   -0.0122   -0.0409   -0.0129    0.0829    0.0664
37   -0.0075   -0.5478   -0.4029   -0.8707    0.0331    0.0246    0.0268   -0.0753   -0.1078
38   -0.2212   -0.0424   -0.1241   -0.2396   -0.5605   -0.5224   -0.4662    0.0556   -0.3065
39   -0.1882    0.0472   -0.0294   -0.2444   -0.5562   -0.6289   -0.4629    0.0965   -0.2906
40   -0.1554    0.0846   -0.0674   -0.1029   -0.6232   -0.6646   -0.5896   -0.0272   -0.2633
41   -0.1530    0.1181    0.2538    0.0625    0.0501    0.0886    0.0121   -0.4528   -0.1914
42   -0.2412   -0.0703   -0.0307   -0.1800   -0.2376   -0.2366   -0.1613    0.1517   -0.4374
43   -0.0871   -0.2939   -0.3319    0.0175   -0.2991   -0.2180   -0.2835   -0.0029   -0.2481
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